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# Big data approaches to crop insurance in Asia

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**David Mäder-Soyka, Fang-Yu Liang, Mangesh Niranjan Patankar, Sophia Van**

**Administering crop insurance in Asian countries with small fragmented agriculture land holdings is an expensive affair, but costs can be substantially lowered with the introduction of index-based or parametric insurance schemes. These are managed, however, through relatively generic data measurements that do not always capture the experiences of individual farmers. The introduction of new data technology services into agriculture, in the form of increased sensor data volume, refined data processing, and far greater mapping accuracy, can all provide a far more detailed picture of risk at a farm level, without the costs of collecting such data manually. Technology can provide a rich source of underwriting and loss assessment data for insurers to improve their index as well as indemnity products. Joint efforts are, however, necessary to ensure that data remains accessible in order to reap the full benefits.**

## The viability of traditional crop insurance and index solutions

Global agricultural production is significantly underinsured, particularly in emerging and developing markets.

Global agricultural production is significantly underinsured, particularly in emerging and developing markets. The last compiled market figures for agricultural insurance (Swiss Re, 2014) estimated global agricultural premiums of USD 26.5 billion. About half of this was from the US and Canada; around USD 9.5 billion came from emerging markets. It is estimated that only one third of global production is currently insured.

The level of agricultural insurance penetration is low, and many of the agricultural economies are dominated by a large number of smallholdings with poor infrastructure and little government support.

The low level of agricultural insurance penetration has been partly connected to the nature of the traditional product. Costs for administering, underwriting and loss assessment of traditional multi-peril crop insurance at the level of individual farms are to a large extent fixed. In other words, the smaller the farms, the less efficient multi-peril crop insurance is. These qualities make it particularly unsuitable for emerging and developing markets. Many of these agricultural economies are dominated by a large number of small-holdings with poor infrastructure and little government support. In India there are, for example, an estimated 120 million individual landholders, whereas the gross cropped area is around 195 million hectares.

Index-based solutions have been driving the fast growth of agricultural insurance premiums globally.

Nonetheless, global agricultural insurance premiums have been growing at around 20% per annum over recent years. One of the reasons behind this growth has been innovation in the form of index-based solutions. Rather than underwriting insurance products that cover the actual farm or field losses, insurers fall back on an easily measurable proxy, such as rainfall. If rainfall does not reach a certain level over a certain region, for example, an insurance payment is triggered. This is easily measured and easily verifiable, allowing for much lower administration and underwriting costs, and swift pay-outs. Products could also be developed based on the representative yield, whereby payouts are generated in the event that the sample yield of a region or yield index falls below a predetermined level.

Although very effective in providing cover against systemic risks, index covers have an inherent challenge of representing individual risks, which is also called basis risk.

Index covers have proved very effective in providing cover against systemic risks. In the case of drought, for example, which affects a wide area, insurance payments can be a valuable component in supporting rural resilience. However, index covers have an inherent challenge of representing individual risks, also called basis risk. For example, for weather index covers, there could be considerable spatial and temporal variations in certain weather variables like precipitation. Farmers may not receive payment for the risk coverage premium they are paying, merely because of the distance between the reference weather station and their farm, which can lead to significant personal hardship. Conversely, there could be instances where the farmers obtain reasonable harvests, and still qualify for insurance pay outs. Yield indices pose an additional challenge, as the sample yields are usually measured manually, leaving a lot of subjectivities in the process.

Advances in technology and data processing may help insurers to provide more granular and objective risk profiles of individual farmers without the prohibitive costs of visiting and assessing individual farms.

What insurers are seeking is a means of providing far more granular and objective risk profiles of individual farmers without the prohibitive costs of visiting and assessing single farms. Advances in technology and data processing may provide them with a basis for doing so. We are witnessing a proliferation of digital market players within Asian agriculture, particularly in economies with strong agricultural sectors such as India, China, and Indonesia. These market players are able to generate a wealth of useful data. They may eventually provide a platform for insurers to offer improved products at attractive prices.

## Where in the 'insurance value chain' will technology have an influence?

Technology will impact the crop insurance value chain at various levels. It is hard to make exact predictions how the business will be reshaped. However, certain trends are already becoming apparent.

Online sales and mobile technology are likely to be game-changers.

In the sales process, online sales and mobile technology are likely to be game-changers. While today agents are selling standard products to their clients, in the future we may well experience farmers buying tailored insurance cover online. For example, Swiss Re's ***AgroApp*** mobile application is built to support selected clients by making the sales process more efficient while capturing the necessary data to improve underwriting accuracy. Tailoring products is supported by ever more localised information and improved risk assessment capabilities of insurers. There are two dimensions to tailoring: first, individual needs of farmers can be better responded to; and second, the product will capture more accurately the local risk characteristics, reducing the basis risk of parametric insurance products.

Improvement in weather forecasting makes it possible for insurers to experiment with dynamic policy inception, waiting periods and portfolio composition.

Improvement in weather forecasting is another element that can have tremendous effects. With better knowledge of the near-term weather forecast, insurers could start experimenting with dynamic policy inception, waiting periods and portfolio composition. If risks are assessed to be lower, why should a company not offer cover even after the sowing date, at a reduced rate? If a certain region is currently under-represented in a portfolio, why should prices there not be lowered to increase sales and improve diversification? In order for such mechanisms to be implemented successfully, insurers will need to strike a balance between farmers' needs and managing risk in their portfolio, but ultimately everybody could benefit. Farmers would have access to insurance even in times of higher individual risk exposure, and insurance companies could avoid antiselection.

Before sending a loss adjuster to a client's field, an insurer can check whether the reported fields were indeed hit by a hail storm or not.

Loss valuation is yet another piece in the value chain that will see impacts from technological developments. In respect of parametric insurance, better calibrated (granular) products will experience lower basis risk. Alternative data sources will make cross-verification possible. In respect of the manual loss adjustment process, insurance companies will be able to improve their operational readiness as well as reduce the level of fraudulent claims. For example, before sending a loss adjuster to a client's field, an insurer can check whether the reported fields were indeed hit by a hail storm or not.

A lot of research organisations are experimenting in precision farming using GPS-based stations to monitor soil conditions and state of plants.

There are a number of research organisations – including the Commonwealth Scientific and Industrial Research Organisation (CSIRO), China National Engineering Research Center for IT in Agriculture (NERCITA), or China National Research Center of Intelligent Equipment for Agriculture (NRCIEA) – which are experimenting in precision farming using GPS-based stations to monitor soil conditions and the state of plants. These are overlaid with integrated analytics systems for precision fertilisation and yield forecasting.

## The advancement of big data technologies into agriculture

It is necessary to look at trends in three different categories of data.

To fully benefit from technological evolution it is necessary to closely follow what is happening in the various domains. In this section we look at trends in three different categories of data. We highlight the work of a few innovators, which serve as examples picked from the much wider community of organisations which are active in this domain.

| Category of data | Technology | Innovative Technology Providers |
|---|---|---|
| Weather and climate | Earth observation satellites<br>Drones<br>Automatic weather stations | Fertilizer Calculator<br>Crop Water Needs Estimation<br>Yield models |
| Soil and geo-spatial | Mobile Apps<br>Location-based datasets<br>Ground Sensors/ Base Stations<br>Drones | Soil Indicators for Scottish Soils, SoilInfo, SoilWeb<br>mKrishi (India), Ci-Agriculture (China), Fujitsu (Japan)<br>Batian (China), RedBird, etc. |
| Crop and yield | Fertilizer Calculator<br>Crop Water Needs Estimation<br>Yield models | BaiKhao |

Source: Swiss Re

## Weather and climate data

Water is a cause of growing agricultural risk in countries like India.

The dominant parameter among weather and climate data is certainly water. Water is a cause of growing agricultural risk in countries like India. In India, availability of water for agriculture use is predicted to fall by 21% by 2020; reserves in 54% of India's groundwater wells are diminishing; and 47% of farmlands are still reliant on monsoon rains [1]. Data hubs such as India Water Tool 2.0 and India Water Portal are critical first steps in tackling this massive challenge. They provide historical meteorological data from many decades, granular water resource information, and 3D-map visualisation.

At a global level, the Tropical Rainfall Measuring Mission (TRMM), a joint mission between NASA and the Japan Aerospace Exploration Agency (JAXA) is an example of satellite-enabled precipitation measurement. It provides 17 years of global tropical rainfall and lightning data at up to 3-hour temporal resolution and a relatively competitive spatial granularity of 0.25° x 0.25°. The dataset can be used to advance our understanding of climate. It supports operational applications such as flood and drought monitoring and weather forecasting. Its successor mission, Global Precipitation Measurement (GPM) will come with a number of improvements while ensuring data continuity.

A number of companies are offering advanced sensor, drone, satellite and remote monitoring technology to provide an increasingly detailed picture of weather and climate risks for agriculture. A few examples are listed below:

Skymet uses drones, satellites and the largest network of 2 500 automatic weather stations across all states in India to gather data.

- **Skymet** gathers data using drones, satellites and the largest network of 2 500 automatic weather stations across all states in India. The company claims strong capabilities in measuring and predicting yield accurately at the village level for any crop as well as forecasting weather- particularly monsoon trend – with high accuracy.

Spire aims to become the world's largest constellation of weather satellites to provide weather data.

- **Spire** aims to become the world's largest constellation of weather satellites to provide high fidelity weather data, especially very precise profiles of temperature, pressure, and precipitation. According to their statement in early 2015, the satellites "will deliver five times the amount of data currently available, taking 10 000 readings per day as compared to the 2 000 readings per day available from a collection of publicly funded weather satellites, vastly improving both short and long-term forecasting." As launches continue, Spire promised "10 times the data by the end of 2016, and over 100 times the data by the end of 2017."

Niruthi specialises in micro-weather forecasts and weather as well as yield data analytics by leveraging hundreds of weather networks and orbiting satellites.

- **Niruthi** specialises in micro-weather forecasts and weather as well as yield data analytics by leveraging hundreds of weather networks and orbiting satellites. It uses Terrestrial Observation and Prediction (TOPS) technology to provide location-specific crop monitoring and yield prediction from satellite and ground-based crop mapping. The spatial resolution of their crop assessments could be as high as one-third of an acre, allowing provision of location-specific information for parametric insurance schemes.

aWhere provides high resolution daily meteorological information combining public and proprietary data.

- **aWhere** provides high resolution daily meteorological information combining public and proprietary data of weather, rainfall, precipitation, minimum/maximum temperature, humidity, solar radiation and wind speed. It is also building proprietary advanced agronomic models combining weather data with additional inputs such as soil quality, planting date, and crop variety, empowering field-specific models for plant growth stages, pest and disease indices and crop stress.

Other advanced weather-data players include The Climate Corporation and The Weather Company.

- Other advanced weather data players are **The Climate Corporation** and **The Weather Company,** which was acquired by IBM. The Climate Corporation ingests over 50 terabytes of live data at any given time from 2.5 million locations along with 150 billion soil observations to generate 10 trillion weather simulation data points used in their weather insurance pricing and risks analysis system. The Weather Company processes 3 billion weather forecast data points per day.

## Soil and geo-spatial data

New techniques are capturing localised data on the nutrition and moisture of local soil.

Until recently, field specific soil analysis demanded significant manual efforts, making the process costly in terms of time taken and the expenses incurred. For example, the most basic technique of soil moisture measurement required physical collection and drying of the soil sample. New techniques are changing this situation, capturing localised data on the nutrition and moisture of local soil.

With analytic tools, smartphones can help assess soil properties remotely with soil photos.

- **Smartphones:** Photographs of soil can be analysed by tools such as the Munsell colour chart. This allows soil properties to be assessed remotely.

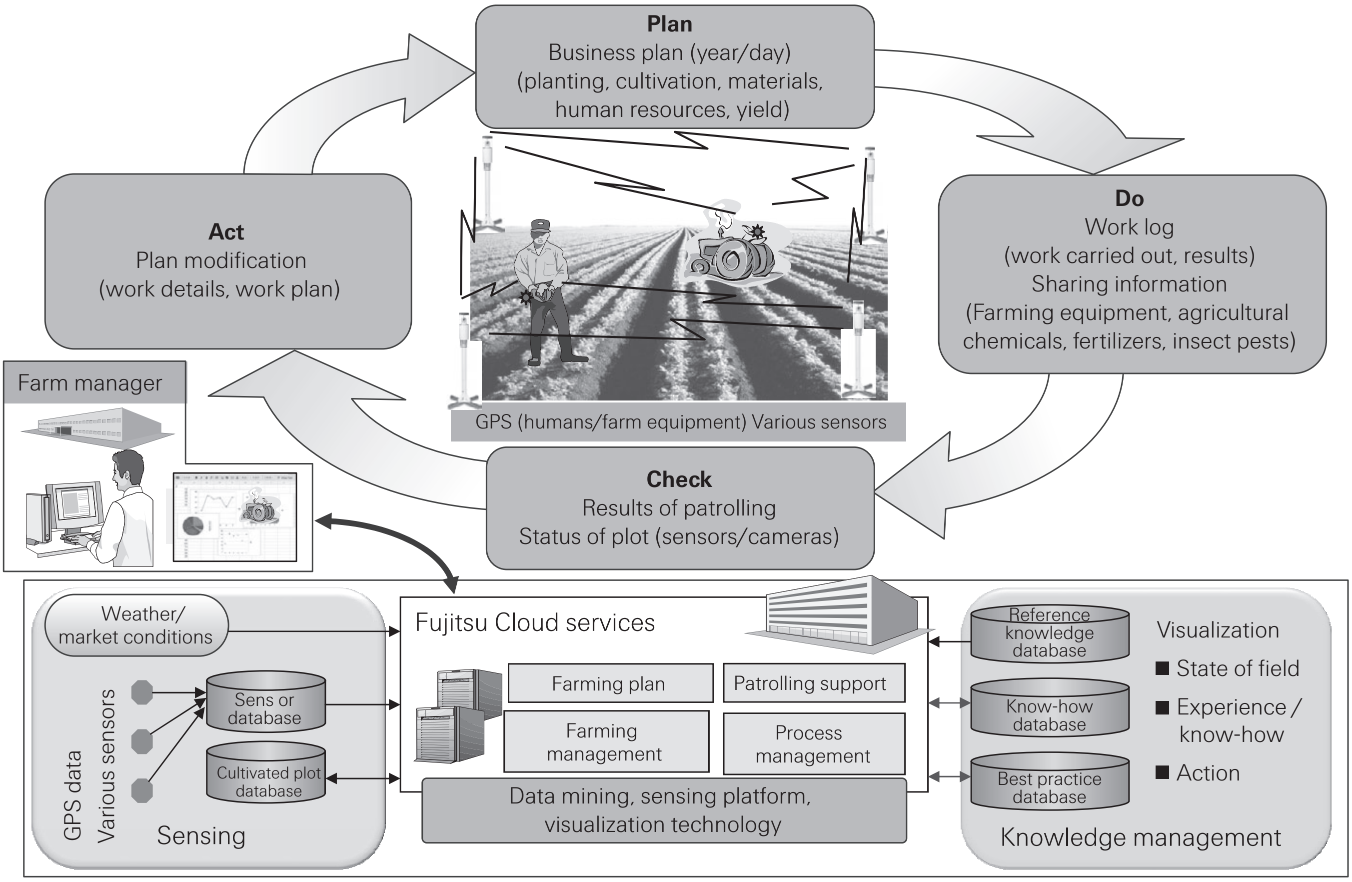
Location data base makes it possible for farmers to access detailed soil information through apps.

- **Location data base:** Soil Indicators for Scottish Soils, SIFSS, has collected soil information over 13 000 locations in Scotland. Farmers can access detailed soil information such as pH, N, P, and K by entering their location in the app. Similar location-based soil information apps are SoilInfo, which is built on the global soil mapping dataset SoilGrids1km; and SoilWeb, which is built on the USDA-NCSS detailed soil survey data.

Soil sensors can broadcast real-time information on the state of local soil.

- **Ground sensors and base stations:** As an Internet of Things technology, soil sensors can broadcast real-time information on the state of local soil. This can be combined with other data to forecast crop yields. This approach is being used by mKrishi in India, Ci-Agriculture in Indonesia, and Fujitsu in Japan.

**Figure 1:**
Application of cloud computing to agriculture and prospects in other fields [2]




Source: Application of Cloud Computing to Agriculture and Prospects in Other Fields. Fujitsu Scientific & Technical Journal 2010, Vol.46, No.4.

Satellites and drones provide useful information to help predict crop yields or to decide appropriate amounts of fertiliser for different areas in a single field.

- **Satellites and drones:** With the help of dedicated satellites, the European Space Agency (ESA) has been able to record more than 35 years of historical soil surface moisture data and also publishes such data in the near-real-timeframe, spanning the globe. NASA's Global Land Data Assimilation Systems (GLDAS) makes information on soil texture, porosity, colour and composition available at global level. Researchers have also used drones to measure soil moisture. Agribotix, an agricultural intelligence drone-enabled startup, has used Normalized Difference Vegetation Index maps (NDVI; estimation of vegetation greenness level) to determine the nutrient uptake in order to apply the appropriate amount of fertiliser to different areas within a single field. This kind of granular, high-resolution information is definitely also useful to predict crop yields and alert on potential water-related risks such as droughts.

## Crop yield data

It is essential to bring in inclusive models with ancillary datasets like weather and soil parameters to predict yield with more accuracy.

Historically, in several developing countries, crude manual crop estimation techniques have been used to come up with national crop yield statistics. For example, in India, government officials conduct random-sample crop-cutting experiments (CCEs) to arrive at the estimations of yield at sub-district level or at even finer granularity. The process is resource heavy, as the officials have to design an elaborate sampling plan, visit the sample fields, demarcate a sub-plot for harvest, conduct physical cutting of the matured crop, dry the yield, weigh it and record it on paper and then computerise the findings. Obviously the process is prone to sampling and non-sampling errors and manual subjectivities. Further, the sampling plan is based on administrative boundaries, instead of agro-climatic boundaries, which further threatens the relevance of the collected data. Especially in the context of yield-index insurance, such data could introduce significant basis risk in the products. Thus, it is essential to bring in inclusive models which take into account ancillary datasets like weather and soil parameters to predict yield with more accuracy. A few techniques are discussed below.

Mobile apps can help provide evidence of canopy coverage or estimate the amount of fertilizer.

- **Mobile apps:** PocketLAI is a mobile app that helps farmers by determining the Leaf Area Index. This uses cameras and accelerometers in smartphones to provide evidence of canopy coverage. BaiKhao NK is an app that estimates amounts of nitrogen fertiliser by measuring the colour level of rice leaves. The data can be further transmitted to central repositories to help build real-time yield estimations.

There have been an increasing number of drone service providers in Asia over the last two years.

- **Drones:** Drones can image, recreate, and analyse individual leaves from close-enough heights to assist in pest control, mid-season crop health monitoring, assessment of soil-water-holding capacity, creation of weed maps or frost damage maps. Inspection of growing crops through aerial surveys with optical sensors is relatively cheap and becoming increasingly widespread. An increasing number of drone service providers in Asia has been observed over the last 24 months such as Batian, Xaircraft, and Precision Ag in China or Skylark Drones in India.

Satellites use optical and radar sensors to monitor vegetation and cropped areas at different resolutions.

- **Satellites:** Several satellites use optical and radar sensors to monitor vegetation and cropped areas at different resolutions. Depending on the crop types, the vegetation data collected during the crop growth stages can be used as a proxy to determine the final yield by carefully studying the correlations between the biomass and yield. Apart from NDVI, other vegetation indices like FAPAR (Fraction of Absorbed Photosynthetically Active Radiation) and LAI etc. are also being explored for the purpose of yield estimation.

**Swiss Re's big-data solution for agro-insurance in practice**

In a pilot experiment in India, Swiss Re has been working with the Government of Maharashtra, Agriculture Insurance Company of India and Niruthi Climate and Ecosystems Private Ltd, to establish a scalable and efficient yield-estimation methodology, which could be used even beyond insurance applications.

The yield estimates are based on the use of the CropSnap mobile app (for selected clients) guided by TOPS technology and complimented with a very limited number of crop cutting experiments. As a first step, modelled estimates are used to guide the sampling in villages that predominantly represent low, medium and high yield categories. At each of the chosen villages CropSnap is deployed to acquire images which are fed into the yield model to further refine its performance.

In the future CropSnap will be tuned to convert photos to estimate yield with minimum CCEs. The refined estimates are used to create an intelligent sampling scheme (unlike the random sampling method used by the government based on administrative boundaries) which ultimately reduces the number of actual CCEs required to be conducted in the field.

This data from CCEs is then further assimilated into the model yields to produce final yield data. The yields derived from the process can be used to settle yield-index insurance claims at a truly 'micro' level, and can also be used for other relevant applications by the local governments.

## Power of crowdsourcing

Mobile technology and fixed line connections in many emerging markets allow farmers to communicate directly with analytics providers.

The widespread availability of mobile technology and leapfrogging fixed line connections in many emerging markets allow farmers to communicate directly with analytics providers. The mKRISHI in India is building a disease-forecasting model using imagery from farmers' mobile phones. The app allows farmers to take photographs or submit symptoms by answering relevant queries. The captured images are compared against the Abnormality Image Gallery Catalogue to check for crop health. Farmers can further record pesticide and fertiliser used or take photos of crops planted and weeds found on the field with GPS coordinates. In return for this data farmers receive free useful information such as crop prices, weather forecasts, and farming tips as well as personalised farming advice. Monsanto's solution in the same context, for example, analyses farmers' inputs such as field boundaries, yield data, and fertility tests to recommend personalised variable rate planting prescriptions. In the future, dependence on such granular field-level data captured by the insured population itself is bound to increase.

## Conclusion

Informatics will increase farmers' ability to access tailor-made data, deploy early interventions and mitigate risks effectively.

Agriculture is a key industry in many developing and emerging economies where a greater proportion of the population depends on farming for their livelihood. Although climatic risks cannot be eliminated – droughts will dry out crops, hail or frost will damage them, floods will swamp them – informatics will surely increase farmers' ability to access tailor-made data, deploy early interventions and mitigate risks effectively. Moreover, the crowdsourcing approach will inculcate a sense of risk-ownership among the farmers in the coming years.

Technologies provide re/insurers with better data and benefit index insurance solutions and indemnity insurance products.

Various technologies discussed in this article enable re/insurers to become closely familiar with the ground risks and increase the granularity as well as the accuracy of the loss information. Index insurance solutions as well as indemnity insurance products could benefit from the depth of data previously only provided by on-site inspections. As cadastral maps of farms, land ownership, biometric and demographic data on the farmers becomes digitized in developing countries, such statistics could be linked with the insurance-specific data to reduce leakage in the insurance solutions. The effects of greater underwriting accuracy should ensure that all farmers receive effective and fair cover – matching more closely with the conditions of their particular farm. Purchasing insurance with greater confidence provides knock-on benefits further down the agro-economic value chain. It will also allow farmers improved access to credit and an increased ability to invest in the productivity of their land. Boosted penetration in turn improves diversification of the risks, benefiting the re/insurance industry.

Farmers, re/insurers, technology providers, local governments and agriculture input/output traders need to develop efficient models to harness each other's expertise and create a win-win situation for everyone.

Special efforts will have to be made by several stakeholders like farmers, re/insurers, technology providers, local governments and agriculture input/output traders to develop efficient models which harness the expertise of each stakeholder and create a win-win situation for everyone. Increased data volume will also call for efficient data management systems and skills to navigate data warehouses. At the same time, it is also absolutely crucial that data needs to become and remain accessible for the insurance industry. Regulations on data security and privacy will surely play a significant role in this context and it would be interesting to see how regulators take a broad and balanced view to enable re/insurers to offer customised coverage without breaching the fundamental rights of the insured customers.

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Fang-Yu Liang was a Big Data & Smart Analytics Intern at Swiss Re, where she supported Sophia Van. She graduated from the MSc Business Analytics program offered by National University Singapore in partnership with IBM and did her master's thesis on the impact of digitalization and big data on re/insurance underwriting practices. Fang-Yu's background is in economics research and financial innovation. She has worked with top researchers from the University of Chicago Booth School of Business and helped to design financial instruments that address specific environmental and social needs. Fang-Yu holds two bachelor's degrees- Economics and Philosophy- from the University of Chicago, where she graduated with distinction.

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Sophia Van is Vice President and Strategy & Innovation Manager at Swiss Re, where she is responsible for strategy and innovation built-up initiatives. She has conducted and authored various studies of big data trends and applications in the context of smart cities, innovation labs, preventive care, agriculture, and marine with special focus on APEC. Prior to her current engagement, she led Sales Strategy, analytics, and Operations where her expertise has been in the area of smart analytics and innovation applications to support sales, CRM, strategy development, and operation for the insurance and healthcare industries. She received an MBA from Duke University where she earned the prestigious scholarship and title "Fuqua Scholar" – an honor given only to students at the business school who graduate in the top 10 percent of their class. She was also a bachelor scholar at Nanyang Technological University with a major in Computer Engineering.

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# Laws of large numbers: Use of big data in Asian Insurance Markets

**"Big data approaches to crop insurance in Asia" is an article in the Risk Dialogue Series publication, "Laws of large numbers: Use of big data in Asian Insurance Markets", published by the Swiss Re Centre for Global Dialogue. The publication features experts from different markets and regions discussing how insurers are currently employing big data techniques in Asia, and where future trends might be heading. Other articles in this report include:**

- **Data protection and privacy**
  Data on individuals may be physically collected in one jurisdiction, stored temporarily in another one and processed in yet a different one. Personal data-protection and privacy laws differ across different countries. Unquestionably, distinct legislations and different compliance postures from governments throughout the world make the realization of potential benefits from big data into a serious challenge, particularly for global companies. After more than two decades of experience, it is clear that the European Union and the United States have very different and irreconcilable positions in terms of information privacy rights and related regulatory practices. The question is whether these differences in information privacy across the globe will open up unexpected opportunities for Asian countries to attract new business from the other two giant regions in the world.

- **Interesting experiments on big data in China**
  There is little doubt about the bright future of applying big data in the insurance industry in China. Almost all insurers in this market have entered the competition to craft big data strategies. But before insurers are able to see any concrete progress, they have to overcome the obvious barrier of data shortage. Data shortage is a direct result of the short history of the insurance industry in this market. The lack of high quality data is also due to the limited capabilities of insurers in data management, analysis and processing. Nevertheless, nothing will stop insurers in China from embracing the big-data era. Among all kinds of interesting experiments, cross-industry integration will be the best strategy going forward. By utilising the strength inherent in underwriting and risk control, insurance companies may unlock the untapped demand for insurance by collaborating with companies in other industries who have high-quality data.

- **From personalised medicine to personalised prevention**
  Whilst personalised medicine is only a recent concept, personalised prevention is already pointing us in a new direction. We can, with big-data approaches and predictive algorithms, finally manage the health status of each individual based on their unique set of characteristics, and we can recommend specific actions to them in real time to improve their individual prognoses and prospects. DEMOS, Demographic and Epidemiological Model of Singapore, simulates the population of Singapore, at the individual level, taking in possible future scenarios and the probability of their occurrence, as well as evaluating the effect of various interventions that may be attempted.

- **Big-data analytics and evidence-based healthcare**
  The healthcare industry is moving towards an evidence-centric healthcare ecosystem, which is key to shifting healthcare towards lower costs and better outcomes. Enabling the vision of truly evidence-based healthcare will require critical investments for turning the huge amount of structured and unstructured healthcare data into care insights that will support evidence-based practice. Big-data analytics technology is the core of the healthcare transformation, and impacts the evidence-centric healthcare ecosystem. The adoption of big-data analytics is the key component to enable the evolution.

- **Affordance analysis for individual analytics ecosystems**
  Organisations in Asia and worldwide are actively looking for ways to take advantage of big-data analytics. One promising use would be the management and prevention of occupational accidents or work-related diseases. Employees' work behaviour and health-related data can be integrated to detect correlations and patterns and to recognise core drivers of human behaviour at the individual or organisational level. This means that the analytics focus shifts from understanding aggregates to understanding actions and behaviours of individuals. The success of using big data for individual behaviour change and awareness creation is, however, dependent on mutual value creation for both individuals and enterprises – a big difference from traditional use of big data. Big-data infrastructures as an "eco-system" may only function properly if the individual and organisational values are aligned and compromised.

By looking into the different aspects of developments in and applications of big data in Asia, this report provides a vivid picture of where the market is going and how the insurance industry could readjust itself to tap into the ongoing change and growth process.

New development is taking place whilst this report is being printed. We'll keep a close watch on the changes occurring and we will keep you updated in our coming conferences and publications.

To read the full report, please visit our website: www.swissre.com/cgd, or order a print copy by emailing us at: global_dialogue@swissre.com quoting the order number as 1507115_16_EN.

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