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INDIAN ACTUARIAL PROFESSION  
Serving the Cause of Public Interest

# **Celebration of** **Actuaries Day** **in 2019**





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"A noble man's thoughts will never go in vain. -Mahatma Gandhi."

"I hold every person a debtor to his profession, from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavour themselves by way of amends to help and ornament thereunto - Francis Bacon"

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I am glad to write to you immediately after the Actuaries day Celebration on 21<sup>st</sup> August, 2019. We had chosen 21<sup>st</sup> August as Actuaries day in the remembrance of the First President of the then Actuarial Society of India **Late Sh. L S Vaidyanathan** who was born on 21st August in 1893. He contributed immensely to the framing of Insurance Act 1938.

The Actuaries day celebrations were planned at six places across the country namely; Mumbai, Gurgram-Delhi NCR, Chennai, Bangalore, Kolkata and Hyderabad. The event was attended by over 450 actuaries and students across these centres. There were celebrations across the world by the members of the Indian actuarial professions.

This year is also important as the Indian Actuarial profession shall be completing its 75 years (**Platinum Jubilee**) in September 2019. The Indian Profession has been the members of International Actuarial Association for the last 40 years and it was in 2006 that the Actuarial professional became a statutory body.

We have made steady progress in growing the number of members over the last 75 years. However, it's the right time that we change the gears to take the profession into the next higher orbit. I am pleased to share with you **Five Big and Brave (5B&B) Goals** for the profession to be achieved over the next 3 years:

1. Well Recognized Profession among Public, Government, and other professional Bodies.
2. Target 30,000 students' members by 5<sup>th</sup> Actuaries day.
3. Target 750 qualified Actuaries by 5<sup>th</sup> Actuaries day.

4. India Specific Study Material by 4th Actuaries day.
5. Leadership in
  - i. Data Science and Analytics
  - ii. Risk Analytics - Insurance, Banking & Finance
  - iii. Enterprise Risk management beyond insurance.

The Goal are Big and Brave and therefore we need to put Big and Brave Machinery to achieve these Goals. In order to achieve these Brave Goals, I am pleased to share that IAI is taking following Seven Big Initiatives:

1. Proactive engagement with Government Bodies to enhance awareness about actuarial profession and potential value that actuaries can add to various social sector schemes.
2. We have increased the frequency of ACET Examinations.
3. Proactive direct engagement with the Universities and colleges and enhance awareness about the Actuarial Profession as career.
4. Marketing the Actuarial profession via Social media to attract best talent to take up actuarial profession.
5. Set up Section 8 -Actuarial Education Company to develop India Specific Material, provide education support to members to qualify faster.
6. Set up Section 8 - Registered Valuer Organization to enable IAI members to provide Professional registered Valuer services for valuing financial Assets.
7. Develop additional Course material covering wider areas like data science, Risk analytics and Banking.

To bring to life our GCA theme of this year "Expanding the Horizon and strengthening the Core", we all must put our hands and minds together. I look forward to whole hearted support from all members to achieve our 5 Big and Brave Goals and take the profession to the next higher orbit.

Immediately after the Actuaries day we had two days, planning strategy execution meeting which was attended by council members, Chair and Secretary of all advisory groups on 24<sup>th</sup> and 25<sup>th</sup> of August, 2019. I am really enthused and energised by sheer presence of all invites over weekend. All advisory group shed their short term and long term objectives aligned with the Goals of the Profession.

By the time you read this column the results of June 2019 examinations would be out. The transition period sometimes becomes a time of experiment in all fronts related to examination, be it selection of subject by the candidate, setting of question papers, conducting practical examinations and judging the performance. Hope fully, there would be lessons to learn from the experience to carry on in a better way. Congratulations to all those who have cleared their paper this time. Those who could not get through this time, please take lessons from the past and move on. The IAI is geared to offer any support in terms of training and coaching, including R and Excel class room trainings involving expert faculty members; you only need to make use of all such wonderful support and facilities. You may always write to [hoet@actuariesindia.org](mailto:hoet@actuariesindia.org) for any support in respect of training and guidance.

It has been quite some time since the implementation of new curriculum, we all concerned about the mutual recognition arrangements with other professional bodies. The IAI is in the process of discussions to make the best out of such arrangements who qualify from these examinations. Any such arrangements, once finalised would be retrospective to avoid any gap.

Let me share a small story with you. A group of frogs was travelling through the woods, two of frogs fell into a deep pit. When the other frogs gathered around the pit and saw how deep pit was, they told these two frogs that

there was no hope left for them. However, the two frogs decided to ignore what the others were saying and they decided to try and jump out of the pit. Despite all their attempts, the group of frogs at the top of the pit were still saying that they should just give up and they will never be able to make it.

Eventually, one of the frogs paid attention to what the others were saying and he gave up, falling down to his death. The other frog continued to jump as hard as he could. Again, the crowd of frogs yelled at him to stop the pain and just die.

He jumped even harder and finally made it out. When he got out, the other frogs said, "Did you not hear us?" The frog explained to them that he was deaf. He thought they were encouraging him the entire time.

The Moral of the story is that irrespective of how hard the work is Task at hand is if we keep working for it without discouragement from your surroundings, you can do it.

Let me close my message with quote from Michael Jordon,

**Some people want it to happen, some wish it would happen,  
But the specials ones make it happen.  
Let's be those special ones, lets make it happen.**



Greetings everyone!

Actuaries Day was celebrated with much enthusiasm by the fraternity and even those working in collaboration with actuaries in varied organizations. It was great to see social media posts of lively celebrations across the country which goes a long way in enhancing awareness! On the occasion of the 2<sup>nd</sup> Actuaries Day, the Institute launched few interesting initiatives - Student Support Scheme for next of kin of martyrs of armed forces and security forces for pursuing actuarial science course and launch of the Actuarial Job Portal (IJP) to connect employers and actuarial resources, among others. Coverage of official events held by the Institute of Actuaries of India is included in this issue of the magazine.

Amidst reports of economic slowdown and weak asset quality of banks, the government announced some big measures recently, including the merger of 10 public sector banks into four big banks which will also impact the bancassurance partnerships of insurers. Despite the overall sluggishness in the economy, life insurance companies continue to report strong growth reflecting that the long-term fundamentals of the economy remain strong. Companies' gradual realignment of business mix towards core insurance products and the long-term prudent view adopted for investments and reserving provides additional resistance to insurance companies.

The Institute recently conducted a seminar on the role of Analytics in Banking discussing the emerging challenges faced by the banking industry, the role of Analytics, Artificial Intelligence and Machine learning



in enabling solutions, and the role actuaries can play. Detailed reportage of this seminar and the 3<sup>rd</sup> Seminar on Banking and Analytics is included in this issue. Another feature covers IFRS Beyond Compliance; IFRS is expected to be a recurrent and key theme for actuaries working in insurance for several months.

We are looking to build an energetic editorial team for the Actuary India magazine that will be actively involved with exploring themes for the magazine, developing content, liaising with authors, putting together interviews of successful professionals among others. So whether you are a young student or an actuary with several years of experience who would enjoy being in the midst of such action, please email us with a specific expression of interest and brief profile in this area. Please also continue to send in your articles and suggestions at [library@actuariesindia.org](mailto:library@actuariesindia.org).



## ANNOUNCEMENT

# 3<sup>rd</sup> seminar on Crop Insurance

**Organised by:** Advisory Group on Sustainable Development & Microinsurance  
**Venue:** Hotel Sea Princess, Mumbai **Date:** 26<sup>th</sup> September, 2019 **Time:** 9am to 5:30pm

### Background:

Crop Insurance is an important means of alleviating farmer financial distress from crop failure caused by a wide range of events e.g., drought, floods, and other natural calamities. It also plays a crucial role in stabilizing farmer income, smoothening consumption in the agrarian sector, minimizing farmer distress and enhancing agricultural risk awareness. Crop insurance is an area where the actuarial profession can play a significant role in the assessment, quantification and management of risks. This seminar provides a unique opportunity for delegates to interact with practicing professionals and learn from technical sessions.

### The Seminar would focus on the following topics:

- ✎ Pricing approaches in Kharif and Rabi seasons, by **A V Karthikeyan**, Appointed Actuary, Reliance General Insurance Company
- ✎ Reserving and capital management in crop insurance, by **Sharad Ramnarayan**, Appointed Actuary, New India Assurance Company
- ✎ Reinsurance approaches to pricing for Indian crop insurance by **Shashank Kaushik**, Actuarial Manager, Munich Re India Branch
- ✎ Insurance product design for contract farming and value added services, by **Sonu Agarwal**, Founder & MD, Weather Risk Management Services
- ✎ Crop insurance underwriting under area yield index insurance, by **D D Dange**, Regional Manager, Agriculture Insurance Corporation
- ✎ Claims management for basis risks reduction in area yield index insurance, by **Priya Sampathkumar**, Head of Crop Insurance, HDFC ERGO General Insurance Company
- ✎ Catastrophe modeling for crop losses (TBC).

### Who Should Attend?

The seminar is open to all who wish to enhance their skills in the area of Crop Insurance. Non-members are also welcome.

### Registration Fees (Excluding 18% GST):

| Categories                   | Amount in INR |
|------------------------------|---------------|
| Students & Associate Members | 2,500         |
| Fellow & Affiliate Members   | 5,000         |
| Non Members                  | 5,500         |

### General Points

- ✎ **Register at:** <http://www.actuariesindia.org/subMenu.aspx?id=499&val=Capacity Building Seminar in Crop Insurance>
- ✎ **CPD Credit for IA members:** 6 hrs. Technical in General Insurance (As per APS 9 - Rev. Version 3)
- ✎ **Point of Contact:** Ambreen Surve ([Ambreen@actuariesindia.org](mailto:Ambreen@actuariesindia.org))
- ✎ **Accommodation:** Program is non-residential.

**Organized By:** Advisory Group on Data Science & Analytics (AGDSA)

**Venue:** The Chancery Pavilion, 135, Residency Road, Shantala Nagar, Ashok Nagar, Bengaluru

**Date:** 27<sup>th</sup> July, 2019

### Session: Inaugural Address & Expectations

**Speakers:** Mr. Sunil Sharma and Mr. Heerak Basu



**Mr. Heerak Basu** is a consulting actuary with Milliman's Life Insurance consulting practice in India. Prior to Milliman, he was working with Tata AIA Life for more than 12 years as their Appointed Actuary. Mr. Basu has also served on the Council of the Institute of Actuaries and was Chairman of the Institute's Life Insurance Advisory Group. He currently sits on the Appellate Authority constituted by the Government of India.

**Mr. Sunil Sharma** has close to 29 years of diversified experience in the insurance and reinsurance sector and has worked across countries. He is currently the Chief Actuary and Chief Risk Officer for Kotak Life Insurance and also serves as the President of IAI.

### Session Highlights

**Heerak** commenced the session by introducing the theme of the event as an advent of Big Data Analytics and Data Science domain coupled with technological revolutions like machine learning, artificial intelligence which have enabled exponential possibilities for actuaries to contribute beyond the traditional domain. He further described the journey of actuaries as a navigation through the changes.

**Sunil Sharma**, President of Actuaries of India and as the Chairperson of Wider Fields Committee welcomed everyone and voiced that actuaries can add value to any

business. To support the fact, the President explained how IAI is trying to work with Reserve Bank of India, Ministry of Corporate Affairs and other organisations so that they can add value to the crucial working environment.

### Session 1: Math Men, not Mad Men

**Speaker:** Mr. John Taylor



**Mr. John Taylor** is the current President of the Institute and Faculty of Actuaries (IFoA). Prior to joining Hyman Robertson, John has spent most of his career in executive level roles with a variety of product providers. John is a partner at Hyman Robertson LLP, based in their Edinburgh office, and is working in what's commonly described as "robo-advice". In essence, this involves making actuarial modelling accessible and meaningful to consumers as they seek to understand financial choices open to them.

### Session Highlights

**John** provided insights into innovative insurance products that are sold in different parts of the globe. He spoke about insurtech, fintech and how these are causing disruption in the insurance industry. He spoke about customer data analytics and how it is important in the current world market for any insurance company to keep up with evolving customer requirements. He also spoke about ethical codes, regulations that are important for smooth functioning of any insurance company in the new age of technology and advancement

in insurance. John also introduced the audience to what is called "robo-advice" and shed light on how its performance in insurance industries is helping data analytics solve complex problems and draw meaningful insights. The audience thanked John for his insightful session.

## Session 2: Use cases of Financial Data Science techniques in Retail Analytics

**Speaker: Mr. Sudipto Pal**



**Yash** set the tone for the topic. He explained how companies like Amazon, Flipkart use behavioral analytics to carry out operations. Actuaries are the engines in the backdrop who use predictive modeling and data science techniques to understand customer behaviour and help them choose better and interesting products, thus increasing sales. These techniques also help in lowering customer attrition rate.

### Session Highlights

**Mr. Sudipto Pal** has 13 years of experience in Statistical Modeling and Data Science. He has worked as a predictive modeling expert in Actuarial Science domain in Insurance Industry, and Retail and Marketing Analytics domain.

**Sudipto** explained he has been developing and using survival model technique for majority of his actuarial lifetime. There are two kinds of a survival model namely,

- 1) Event model: which measures probability, hazard rate, or intensity of an event, i.e. modeling probability of surviving beyond a time threshold e.g.: Attrition Probability using Cox Regression (or also Kaplan-Meier)
- 2) Waiting time model: modeling waiting time till an event, e.g.: Attrition Timing using Accelerated Failure Time (AFT)

Sudipto highlighted different ways of solving the Survival models. Traditional one's being Proportional Hazard, Accelerated Failure Time and Markov Chain, less

traditional one's being Discrete Time Survival Regression using Logistic Regression, Ensemble Learning (Random Forest (RF), Gradient Boosting Machine (GBM)), Neural Networks, Support Vector Machine (SVM), Classification and Regression Trees (CART) etc.

He spoke about usage of survival models not limited to life insurance (lapses/attrition), but also survival of reserves in non-life domain. In Retail industry, lifetime of a customer is not important to the company if the customer continues buying products from it. Important event to retail industry is the lapse or attrition of a customer where the individual discontinues buying products from the company. Sudipto explained how Customer Lifetime Value and attrition can be calculated in an insurance industry and in retail industry. For retail industry, buy Till You Die (BTYD) is an unstructured model, where customer purchase history is used to model the future buying pattern, also Recency frequency Model (RFM) and Money Model which provides customer potential and helps in identifying right set of customers and making sure that they keep buying products with the company for a longer period. He further went on to explain Discrete time survival regression which can handle high dimensionality and has no nonparametric estimation for baseline hazard. Sudipto explained how survival models are used for Product recommendation, Inventory Management and Queuing theory. He further went on to explain differences in cashflow models between life insurance, pension and retail subscription, eg: in case of life insurance and pension we can trace the time of death, whereas in retail this is not possible.

Sudipto concluded with the example of insurance sold with fitness products, 'Fitbit' being the best example, this helps insurance companies track customer health and thus charge premiums accordingly.

**Mr. Mahidhara Davangere** thanked **Mr. Sudipto Pal** for enlightening the audience with his contributions in Retail industry using actuarial techniques and felicitated him with a momentum as a token of appreciation from Institute of Actuaries of India (IAI).

## Session 3: Augmented Intelligence and its potential for Actuaries

**Speakers: Mr. Sandeep Patil and Dr. Prasanna Srinivas V.**

**Yash** introduced the speakers for the day. **Mr. Sandeep Patil** is a seasoned Analytics and Actuarial professional with 17+ years of experience in the US, UK, India and other global insurance markets. He is a Fellow of the Society of Actuaries (FSA) and a Chartered Enterprise Risk Analyst (CERA).



**Dr. Prasanna** is a seasoned data science leader with over 14+ years of post-Ph.D. industry experience in solving advanced analytics problems in the domains of credit risk, fraud analytics and financial crime using cutting edge machine learning algorithms.

Yash talked about Augmented Intelligence being a mystique topic in the domain of Actuarial Science and how it has gained momentum in the last two years. Actuaries using their mathematical and statistical knowledge can come up with solutions to complex problems using Augmented Intelligence.

### Session Highlights

**Sandeep** set the tone for the topic. He briefly spoke on how he was inspired to work in the field of data analytics when he had collaborated with Prasanna in their previous firm on developing fraud detection model. Sandeep later went on to explain the advantages of predictive modelling and how it can be leveraged by insurance companies to handle analytics.

Disruption has four segments: 1) Regulatory pressures 2) Business changes 3) Technology advances and 4) Workforce diversity.

Sandeep explained how General Data Protection Regulation (GDPR) by EU has been one of the most important regulation till date. With its introduction, data on individual privacy from social media sites are safe and cannot be used against their will and wish. He also spoke about customer expectations. Sandeep quoted an example of 'Metromile', a San Francisco-based car insurance startup that offers pay-per mile insurance and a driving app. This product offers its customers to pay for their car insurance only when it is on the road as 60 % of a car's lifetime is spent in a garage. Such personalized products have been created to meet the demand of evolving customer expectations.

Sandeep also spoke about IFRS 17 being a good initiative across insurance industries using which valuation can now be compared with consistency and ease.

Prasanna spoke on the disruption- technology advances and workforce diversity. He explained that the most important need for building a full-proof model will be understanding the data. He talked about an article by US Statistical department which says that in the years to come, 70% of workforce will be Millennials, who will occupy 80% of job roles that are yet to be invented. Prasanna also briefed on the necessity of a model to be robust to handle both structured and unstructured data and easy to draw insights for better analysis. He gave examples on Diagnostic analytics (why something has happened?), predictive analytics (what could happen?), prescriptive analytics (what ought to happen?) and forensic analytics (establishing evidences to the decision that one has taken). These would contribute to an improved data analytics model leading to better decision making, visualization of data, and credible results.

Prasanna spoke about the explain ability aspect in Augmented Intelligence and that it reflects evolution of human intelligence. He specified on the need of a proper model governance and introduction of new regulations for deriving better insights from black box models. Experiences were shared from AI used cases, few of them being settlement of amount, early fraud detection, employee retention, product design and customer retention.

The audience thanked **Mr. Sandeep** and **Dr. Prasanna** for their insightful topic and examples that created a new hope of applying actuarial techniques in nontraditional domain. **Mr. Mahidhara Davangere** thanked the **Mr. Sandeep** and **Dr. Prasanna** and felicitated them with a momentum as a token of appreciation from Institute of Actuaries of India (IAI).

**Session 4: New age analytical techniques and technologies to improve organizational Risk culture**  
**Speaker: Mr. Srijan Raychaudhuri**



**Srijan** is a Director with Acies Consulting LLP leading solutions in the analytics and risk technology domain. He has over ten years of experience working with

leading financial services institutions in India, Middle East, Hong Kong, Singapore, UK & USA. Prior to his association with Acies Consulting, Srijan has been associated with Deloitte, PWC, Citigroup and EY and served Indian as well as global clientele like HSBC, Metlife, Bank of America, Kotak Mahindra Bank and Indusind Bank.

### Session Highlights

**Srijan** opened the session with a brief on integration between risk analysis and business decisions and how they affect each other. This session introduced the audience evolution of risk in the Banking Industry and the factors that are currently enabling the Banking analytics evolution. He explained how the Quantitative Research shifted to Quantitative Analysis and then to Data Analytics from around year 2016 onwards. Srijan helped audience to trace from BASEL II in 2004, the evolution of Bank regulatory needs and the improved Risk culture to IFRS 9 in 2019 and revised SA approaches. Mr. Srijan explained the change in integration between risk analysis and business decisions before and after the Financial crisis of 2008. Some studies undertaken were Underwriting of High Risk Loans and Counterparty credit risk faced during Lehman Bankruptcy.

Some of the Modelling techniques used in Banking risk analysis are Statistics Models and Simulations, Econometric Models, Deep Learning and Machine Learning and Survival Models.

### Session 5: Actuaries in the Gaming Industry - Experience Sharing

**Speaker: Mr. Sumit Ramani**



**Sumit Ramani** is an Information and Communication Technology (ICT) engineer turned actuary. He has over a decade of experience in (re)insurance industry with a focus on Life and Health insurance and has worked with stakeholders/clients across the globe including Americas, Europe, Australia and Asia.

### Session Highlights

**Sumit** shared his experience on how Actuaries can also contribute in Gaming Industry which is completely an unconventional and unexplored field for Actuaries. He told that the game was about Digital horse racing where the player can buy a digital horse, Breed (and sell/own) digital racehorses or race digital racehorses. The game also was powered by Blockchain & Smart Contracts.

He then mentioned that the clients were aware that they need an Actuary with technical skills in Actuarial, modelling and Blockchain. He told that the important aspect to crack the deal was paraphrasing the problem statement and propose a high-level solution in an easy way.

He experienced that the solution for the problems he was looking for has some similarities to the actuarial experience he has gone through in Life and General Insurance. This way it became easier to model and solve the issues for the engagement. For the number of horses in future, the Heath, Sick and Dead model came to be of use while for Racing Simulation, random walk and Monte Carlo Simulation was used. The creation of a betting engine was same as that of Pricing of term insurance policies with a difference that most of the times, a better one will win.

**Sumit** ended the session by providing tips that some of the skills which are needed to work in non-conventional areas involves problem solving mindset, Modelling, Statistics, Communication, Willingness to learn, appetite to risk, Professionalism and Ethics and understanding of business.

### Session 6: Actuarial Profession in Industry 4.0 and beyond

**Moderator: Mahidhara Davangere**

**Panelists: Sunil Sharma, President, IAI**

**John Taylor, President, IFoA**

**Dr. K. Sriram, Consulting Actuary**

**Subhash Chandra, Country Head - Blueprism India & South Asia**

**K. Sriram** is a Consulting Actuary engaged in Employee Benefits Consulting Practice. He is also Consulting Actuary to Genpact India, the largest business process outsourcing company in India. From January 2010 to April 2012, Sriram was the Appointed Actuary of Max Bupa Health Insurance Company Between 2002 to 2006, Sriram was the Chief Actuary & Appointed Actuary of MetLife India Insurance Company.

### Session Highlights

**Mr. Mahidhara Davangere**, moderator for the session,



welcomed everyone to the panel discussion, featuring highly respected professionals who have each spent close to 20 years in different parts of the Industry -from consulting, to risk management and research. Mr. Davangere kicked off the discussion by posing the question about what Actuarial Profession in Industry 4.0 stands for and where can Actuaries provide their services and add value, opportunities in General Insurance sector and not Actuarial.

**Subhash** answered the question the industry is going to experience not only Insurance but also financing sector, gaming and data is becoming the core. We need to keep mining the data for more accuracy. We need to prove real business benefits of the statistics and modelling. For opportunities, he added that there can be many factors which comes into play as we now also have sensors data. The protocols are also getting standard now for everyone which will help a lot in industry 4.0. We also need to look into automation.

**Sunil** highlighted the importance of having an Actuary in GI industry which is completely unexplored. There is huge potential as in GI we have huge amount of data. The behaviour of policyholder is very dynamic. The data science can help to reduce the risk and contain the premium rates because consumers are the end of the journey.

**Mahidhara** questioned that what are the regulatory requirements for data security and how the landscape changed has happened in response to industry 4.0 and what kind of changes we may require as the data is available for everybody so how to manage the restrictions in Insurance?

**John** answered the question by explaining effect of change in GDPR guidelines in Europe and worldwide. He explained that the data is now cannot be explicitly used and has to use it prudently to ensure they are following the guidelines. There are definitely constraints now and the organisation have to be conscious and ultimately it is helpful for consumers.

**K Sriram** voiced on that lot of data remain with the Actuaries for valuation of Employee benefits and thus there are contracts underwritten for the safeguard of such data.

**Sunil** told audience that in India, the authority has been stringent that they can only share data for underwriting and claims. It is now crucial for companies to keep data warehouses. The restrictions for data not going outside country are already in place. The data privacy regulation may come soon from the regulator.

The next topic discussed by the panel was the skills that an actuarial student should possess and how the Institute is preparing for that and fitting the Actuaries in Industry 4.0.

**Sunil** explained that the actuaries need to be equipped for industry 4.0 and a separate advisory group is already in place. They are trying to create the awareness of how the actuaries can bring value to the business. Communication is the key for going into non-conventional market where number of investigations can be performed like stochastic modelling, mobility, mortality, predictive analysis and more. The business objectives need to be aligned with the analysis we have done.

**John** explained that this is the priority for IFoA to take advantage and explore the opportunity for Data Science. The fundamental thing that institute is trying to create the awareness that the data analytics is a stream for Actuarial Science.

**Mahidhara** concluded the session with statement that the pro activeness of Institute for the innovation would help to align and synchronise the mindset with Industry 4.0 and the landscape would change soon from traditional to beyond expectations.

#### Written by



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**Mr. Mayank Goyal**



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**Organized By:** Advisory Group on Health Care Insurance  
**Venue:** Hotel Sea Princess, Mumbai **Date:** 2<sup>nd</sup> August, 2019

### Welcome Address



**Mr. Vishwanath Mahendra**, Chair, HCI Advisory group welcomed all participants and provided brief background on the planned sessions.

### Session: Wearable - Impact on morbidity

**Speaker:** Ms. Joanne Buckle



**Ms. Buckle** has experience in health markets from the US, Europe to Asia and the Middle East. She works on traditional actuarial work such as pricing, capital modelling and reserving, but also has significant experience in government health systems, working on large scale payer and provider reforms, provider contracting and managed care analytics. She has a keen

interest in health risk management and advises clients on calculation methods for assessing the value of health interventions.

### Session Highlights

The session started with the observed growth of the wearable market in different geographies. Ms. Buckle talked about various device providers, functionality offered and cost. She then cautioned users on possible differences in the accuracy level.

**Ms. Buckle** mentioned that average take-up rate of wearables is still very low. Most of the times, wearables are used by insurers as marketing tool to increase engagement with policyholders rather than using them to design true claim cost management program. She further mentioned that, Insurers need to allow for quality of data collected, possible fraud by the insured, possible regulatory concerns on using ongoing data generated by insured and implementation costs before finalising the incentive program design around wearables.

Interpretation of data captured demands special skill as behavioural factors, base activity level and trend over time play more important role rather than absolute values of captured data at any point in time. Secondary impact of tracking calories consumed might encourage users to use processed food due to availability of calorie information rather than cooking own food.

Ms. Buckle concluded the session mentioning that there is limited evidence to suggest the effectiveness of wearables to predict claim cost accurately. Data captured by wearables is not the main influencer on claim cost. Smoking status and BMI are still very important in making underwriting decision. However, wearables encourage the insured to increase activity level and may be useful over long term for insurers. Practitioners will need to use the huge data captured by wearables wisely to have competitive advantage.

Audience shared their experience of using wearables and asked questions around - possible use of embedded devices as an alternative, ineffectiveness in predicting infectious diseases, possibility to track mental health / emotional state.

**Session:** Ayushman Bharat - PM -JAY: An update on progress

**Speaker:** Ms. Parul Naib



either by provider, beneficiary, insurer or TPA. Ms. Naib mentioned how the use of penalty, recoveries, possible suspension and making information public can act as deterrent to misuse and be effective as preventive techniques. She further talked about the use of real time triggers, risk scoring, visualisation dashboards, heat maps for incidence rates and field visits for fraud / error (caused by lack of understanding) detection. She shared examples suggesting possible misuse / abuse of the scheme / scheme benefits. Examples included those of beneficiaries adopting uncles / aunts, doctor performing multiple surgeries at multiple locations situated far from each other and the shocking example of higher hysterectomy utilization in a village.

Ms. Naib concluded the session by mentioning upcoming 'Innovation challenge' and how this grand scheme is impacting lives of the beneficiaries for the better and bringing smiles back.

A Risk Management Professional with 15 years of experience in Data Analytics and Forensics, **Ms. Parul** has worked with a multitude of global companies in the Financial and Healthcare Domain such as American Express, United Health Group and ZS Associates in US, Europe and India. Ms. Parul is a Postgraduate in Economics from Delhi School of Economics and has a Degree in Risk Management from Stanford.

#### Session Highlights

**Ms. Naib** gave overview of NHA - the implementation authority responsible for design and roll-out of PM - JAY. She talked about the epidemiological transition leading to rise in proportion of non-communicable diseases and associated catastrophic health expenditure. Under Ayushman Bharat, PM-JAY is designed to reduce this financial burden on poor and vulnerable BPL families (as identified from census data) by offering a health cover of INR 5 lakh per family. This completely cashless and paperless scheme is designed to cover medical and hospitalization expenses for almost all the secondary (e.g. haemodialysis, cataract, gynaecology) and most of the tertiary (e.g. cardiology, knee replacement, oncology) care procedures in public and empanelled private hospitals at pre-determined competitive package rates.

Health being a 'State subject', states have launched the scheme under trust mode (the most popular mode), full insurance mode or mixed mode as per their preference and experience with state run schemes. It is to be noted that even with these differences between states, the scheme is portable between states (i.e. beneficiary state and treatment state can be different). She highlighted the important role played by AAROGYA MITRAS to create awareness and the use of various touchpoints for proper communication with beneficiaries.

For the long-term sustainability of the scheme, it is important to be vigilant and have capacity to detect and prevent possible misuse of scheme / scheme benefits

**Session:** Key findings from analysis of IIB data and way forward

**Speaker:** Mr. K. S. Jagadeesha Reddy



**Mr. Reddy** took charge of Health vertical of IIB as its Head in January 2012. He has in-depth knowledge of both Insurance domain and Data. Earlier he worked with LIC of India for 26 years and gained rich experience on administrative side by working across many functions. He has also coded programs to meet the ad hoc requirements of the users and trained other programmers to do so. He is a graduate from Sri Venkateswara University, Tirupati and a fellow of Insurance Institute of India.

#### Session Highlights

**Mr. Reddy** gave overview of transaction level Health data collected by IIB at policy, member and claim level with data formats prepared by experts drawn from various insurance companies, GI Council and IIB. He talked about the further usage of this data in creation of regular reports (annual report and Health claim inflation report), various bespoke reports for contributing insurers as per their requirement and other reports like report on non-Communicable diseases (NCDs) and communicable

diseases (CDs), disease burden vis-à-vis air quality index.

He highlighted the critical role played by Project ROHINI where 13-digit hospital code is allotted to each hospital. The project has helped bring in transparency between stakeholders, make claim processing faster and helped TPA to achieve cost saving. He also mentioned about Health insurance portability service where the last 4-year data will be provided to porting-in insurer. IIB Health vertical also answers various queries raised in parliament on Health Insurance.

Mr. Reddy talked about International classification of diseases and shared IIB findings around major disease types, distribution of claim size, components of claim cost and observed Health claim inflation. He provided key statistics around observed proportion of NCDs and CDs by count and amount. He further shared insights presenting analyses by state, distribution channel, disease type and average hospital stay. Mr. Reddy presented study results of impact of air quality on circulatory and respiratory diseases across age bands and gender pertaining to a few polluted Indian cities.

He stressed the importance of completeness and quality of data provided by contributing insurers. He concluded the session by saying that it is the duty of insurers to enable IIB to serve the insurers better.

Audience shared their experience on data quality issues with use of coinsurance, use of different TPAs. They expressed the need to have co-morbidity data, procedure codes and associated issue of trained manpower and cost implications. Audience asked questions on Actuarial involvement in calculation of Health claim inflation and impact of underlying mix of claims on inflation.

#### **Session: Impact of Modern Treatment Methods**

**Speaker: Mr. Sumit Ramani**



**Mr. Sumit Ramani** is the founder and consulting actuary at Actuarial Consultants. He is a Fellow member of Institute of Actuaries of India and Institute and Faculty of Actuaries, UK. He has over a decade of experience in (re)insurance industry and worked in global markets including Asia,

Europe, UK and USA.

#### **Session Highlights**

**Mr. Ramani** gave background of new IRDAI exposure draft and inclusion of 12 Modern treatment methods therein. He then discussed the challenge to price for these methods with limited available data and unknown future trends. He gave overview of selected few of the modern treatment methods highlighting the aspects like the period over which each method is used in other countries, availability of technical expertise, positive & negative aspects of the treatment with expected cost of treatment and equipment cost.

He then discussed the possible framework which can be used to study the impact of such modern treatment methods. The framework requires the practitioner to understand the key internal and external stakeholders. He will then need to use his judgement to understand the proportion of population which may opt for such new treatment depending upon prevalent treatments / age / gender / co-morbidity conditions. Multiple sources need to be used to arrive at expected frequency and severity. He further discussed the risks, possibility of any second order impact of new treatments and methods to mitigate / allow for such risks.

Mr. Ramani then used this framework and applied it to one of the new treatment methods and discussed possible impact on cost. He also mentioned the need to allow for possible change in take-up rate of treatment method post availability of insurance cover.

Audience discussed the questions raised by Mr. Ramani on fairness of risk pooling (as only handful of insureds will be utilising modern treatment methods due to limited availability of infrastructure / trained resources) and pricing (considering possibility of wider usage of treatment methods in future to cure multiple ailments).

#### **Session: Sharing insights of a comprehensive study conducted on Health Insurance in India**

**Speaker: Dr. Abhijeet V Ghosh**



**Dr. Ghosh** is director of Health vertical in LexisNexis.

## Session Highlights

**Dr. Ghosh** talked about his organization and engagement activities they conduct to understand stakeholders. Dr. Ghosh shared survey results of important factors considered by customer to choose an insurance company, age-band wise important reasons to port an insurance policy. He then discussed the priority/ focus area for insurers and pointed out the mismatch between company priorities and customer expectations.

Dr. Ghosh further discussed automated decision making through use of data and discussed the health of data available for analyses. He mentioned how data fill rate is very low for optional data categories (e.g. procedure codes, medical history, height, weight, sum insured, deductible).

He highlighted the importance of optical character reader (OCR) to read scanned / digital data, compare value read with reference range and flag possible fraud (e.g. treatment not in sync with test reports). He pinpointed the need to have uniformity in recording hospital details. For comparability of average costs (say) it is essential to allow for differences between hospitals. Actionable insights can be obtained only through normalized data.

Dr. Ghosh mentioned that new data analysis techniques can be used for underwriting (improved risk assessment) and claims control (flagging suspicious claims like overstay, over charging to achieve reduction in fraud, waste and abuse). He concluded that insurers can effectively use these techniques to help achieve profitability targets.

### Session: KIFRS 17 from Health Insurance perspective

**Speaker: Ms. Yogita Arora**



**Ms. Yogita** comes from a diverse background with 13 years of experience in Life, General as well as Health Insurance. She has worked for the Indian, US and Asian insurers. Currently, she is working as a consulting Actuary for Milliman. She has served as Appointed Actuary for 2 niche Indian General Insurers.

## Session Highlights

**Ms. Arora** gave overview of IFRS 17 specifying the contracts for which the standard applies and where it does not apply. She explained the concept of contract boundary underlying IFRS 17. She then specified the level of aggregation demanded by the standard - yearly cohorts based on policy issuance (consistent with internal reporting) and 3 groups of contracts for each issue year - onerous, profitable and those that might become onerous. The standard requires insurers to recognize losses immediately but recognize profits over a contract duration. She described the default building block approach (BBA) and the option to use premium allocation approach (PAA) for contracts with coverage period up to 1 year. She then compared these valuation methods with the current methodology for valuing expired and unexpired risks. The Standard provides 3 transition approaches for insurers - full retrospective, modified retrospective, fair value approach.

Ms. Arora considered 5 broad categories of Health products - Short term hospitalization cover, more than 1-year hospitalization cover, travel, personal accident and Other group products. For these 5 categories, she further discussed available valuation options. She discussed the possible impact on contract boundary of: i) a regulation not allowing premium rates alteration for new products till 3 years and ii) pricing approach to use expected claims experience over future 3 to 4 years given policy conditions like waiting period. As decision to use PAA still requires regular demonstration that results do not differ materially from BBA, she considered practical difficulties of maintaining 2 models and additional explanation required for key stakeholders.

Ms. Arora discussed other considerations related to wellness benefits, discounting, risk adjustment, reinsurance / coinsurance, retrospective reporting, disclosure requirements and presentation in financial statements.

### Closing Remarks and Vote of Thanks

**Ms. Raunak Jha**, Secretary, HCI Advisory group concluded the proceedings for the day and thanked the participants for making the event very successful.



### Written by



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## Celebration in Mumbai



L.S. Vaidyanathan, FIA





## *Celebration in Gurugram*



L.S. Vaidyanathan, FIA

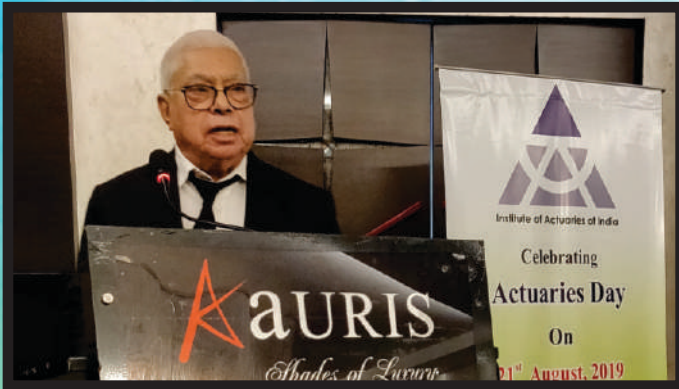
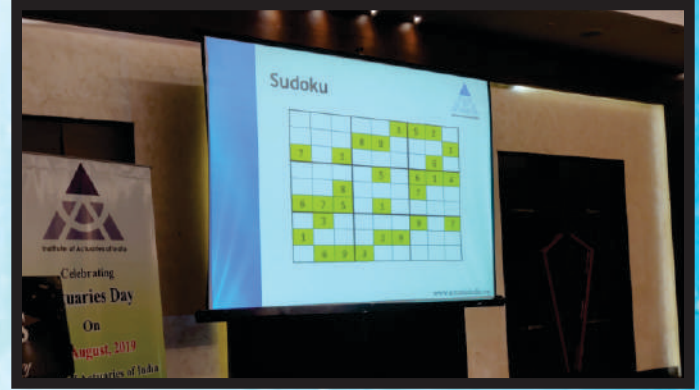




## Celebration in Kolkata



L.S. Vaidyanathan, FIA

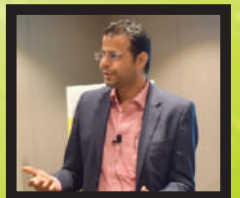
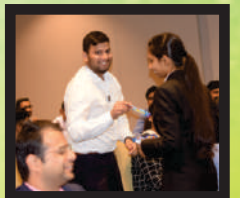
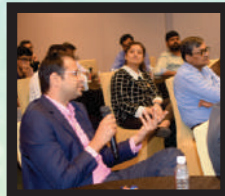
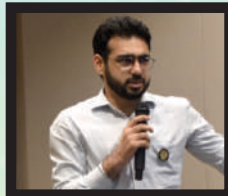
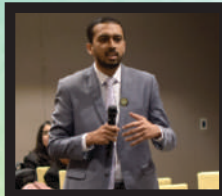
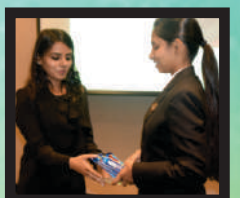
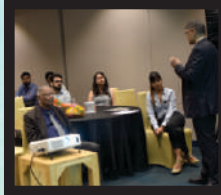
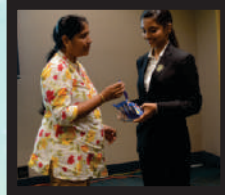
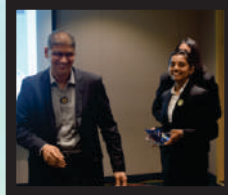
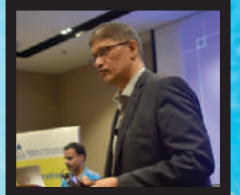




## Celebration in Bengaluru



L.S. Vaidyanathan, FIA

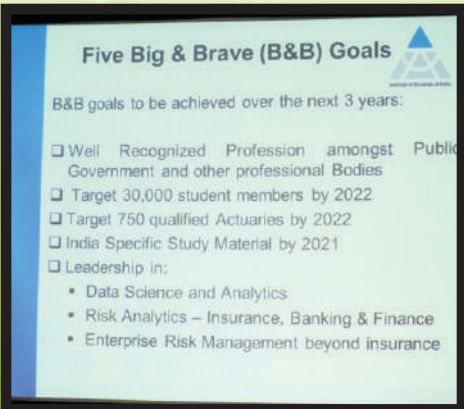
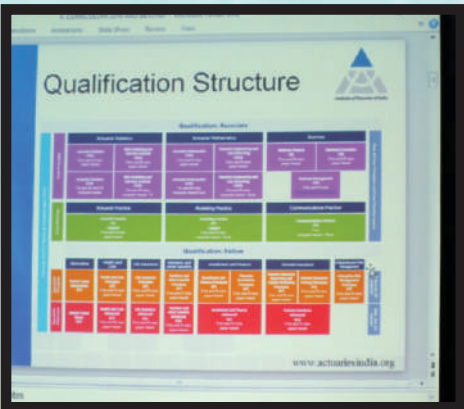
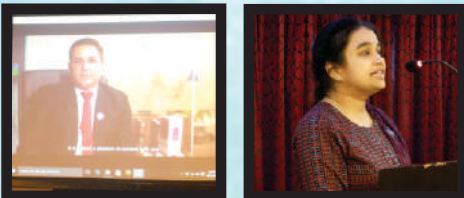




# Celebration in Chennai



L.S. Vaidyanathan, FIA





## *Celebration in Hyderabad*



L.S. Vaidyanathan, FIA





## Glimpses of Actuaries Day 2019 celebrations

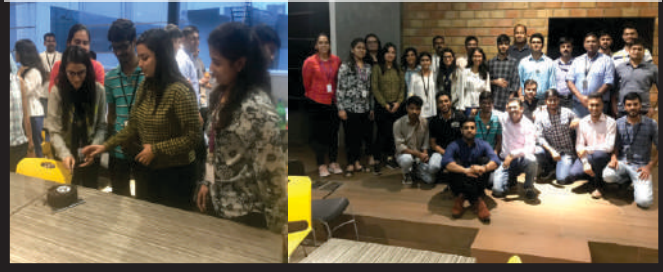
**London**



**Kotak Life Insurance**



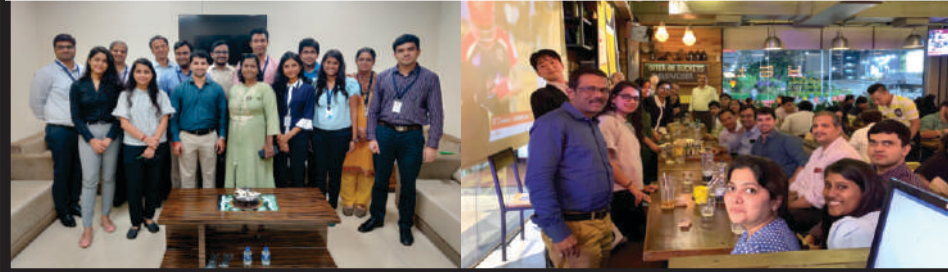
**Go Digit**



**Swise Re**



**Star Union Dai-ichi Life Insurance**



**Future Generali**



**IDBI Federal**



**Principal**



**Max Life Insurance**





## Glimpses of Actuaries Day 2019 celebrations

**Apollo Munich**



**Munich Re**



**Finatics**



**Happy Actuaries K A Pandit**



**Canara HSBC**



**Aegon Life**



**PMLI**



Planned By: Advisory Group on Data Science and Analytics

Date: 10<sup>th</sup> August, 2019

Time: 12:00–13:00

**Speakers:** Mr. Sunil Sharma, President, IAI & Mr. Vineet Khanna, Executive Director - SAS Institute India (Pvt) Ltd

**Moderator:** Mahidhara V Davangere, Founder & Managing Director, Pramatha



### Introduction

A webinar titled “**Analytics in Banking**” was conducted by Advisory Group of Data Science and Analytics on August 10. **Mr. Sunil Sharma**, **Mr. Mahidhara Davangere** and **Mr. Vineet Khanna** discussed with about 346 attendees the emerging challenges faced by the banking industry and how Analytics, Artificial Intelligence and Machine learning is helping banks overcome some of the challenges. The Webinar also discussed the role actuarial profession can play in helping banks raise the standard of their Analytics w.r.t model building, validations and deployments.

### Webinar Structure

The webinar started with an introduction to the topic. Banking sector in the Asia Pacific region is facing the challenges of shrinking margins, rising cost of capital and rising operating expenses. This has impacted their Return on Equity in the last few years. Banks are deploying Analytics, Artificial Intelligence (AI) & Machine Learning (ML) at an increasing rate to grow revenue, control frauds, improve operational efficiency, better

manage risks and optimize their capital.

Leading Analysts expect the growth rates of Analytics, AI & ML market to be high over the next 5 to 10 years. Growth rate in analytics deployments on cloud is going to be significantly higher than that of on premises deployment.

After the introduction to the topic, the webinar discussed some examples. Following are some of the excerpts:

### Risk Management

Banks deploy analytics in managing Credit, Market, Operational Risks, Stress Testing and Asset Liability Management. Moreover, they attempt to do such deployments in an integrated manner to facilitate Risk Based Supervision from regulators.

As an Example - In Market Risk, Analytics is used for valuation of instruments, fitting models to various risk factors that impact the valuation, setting up simulations - such as Historical, Monte Carlo simulations to calculate risk measures such as Value at Risk (VaR), Incremental VaR, Potential Future Exposure (PFE), Expected Shortfall etc.

### IFRS

IFRS 9 will impact banks' profitability margins due to the much higher Expected Credit Loss (ECL) provisioning, especially on medium- and long-term exposures categorized as stage 2. This will be even higher for low rated customers and those with poor collaterals. Banks are building and implementing credit risk models that can assist in not just IFRS9 compliance but also help provide an early warning on the positions that are likely to move to stage 2. Credit monitoring under IFRS 9 will likely trigger an enhanced collaboration amongst the Finance, Risk and Lending functions with an objective to optimize profitability.

### Customer Insights

Marketing complexity is driving billions of possible interactions between banks and customers, fueled by an

explosion in marketing channels and mobile lifestyles. The Banks are combining traditional direct methods with all the possible ways a bank interacts with a customer - web search, call center, mobile, social and email. Today's Marketing combines the direct and digital marketing to enhance the digital experience for a customer and at the same time improve the consistency of customer interactions across other channels.

### Fraud and Financial Crimes

Banks look to combine business rules, anomaly detection, predictive models and network analysis to provide the highest probability of alerting cases worthy of analyst investigation and mitigate business risk. Banks are using analytics to empower end users in quickly and efficiently dealing with the high volume of alerts as well as the post qualification of these alerts as false or true ones. In addition, banks are looking at analytics to enable them to discover new Money Laundering and Fraud schemes that they cannot identify with their existing business rules.

### Cyber Analytics

Banks are looking at Cyber Analytics to help reduce mean time to detect (MTTD) and mean time to respond (MTTR) to cyber incidents. By deploying AI & ML, banks are controlling costs to remediate incidents, make the best use of existing staff skills, reduce security risk and modernize the security operations. Banks are looking at range of analytical techniques to add context to alerts. E.g., Text Analytics can be used with events frequency to

determine rarity of events. Spatial-Temporal analysis can be used to uncover hacker's attack "fingerprints", predict and mitigate large scale global cyber-attacks.

### Key Takeaways

Analytics is a rapidly changing & fast-growing area. Banks are increasingly turning to Analytics, AI & ML to solve their business problems. As a result, the demand for high quality data scientists is quite high. Actuaries with their multi-disciplinary skills sets - data analysis, stochastic modelling, model validation and business understanding are well suited to take up these roles. They also get an opportunity to apply these skill sets to wide variety of data and problem statements. An increasing number of actuaries working in banking performing and data science roles creates a win-win situation for the actuarial profession and the banking industry.

More details are available on IAI website:

<http://www.actuariesindia.org/subMenu.aspx?id=497&val=Webinars>

#### Written by



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“Mr. Vineet Khanna is an Executive Director of SAS Institute India (Pvt) Ltd.”

# CALL FOR ARTICLES



We invite articles from the members and non members with subject area being issues related to actuarial field, developments in the field and other related topics which are beneficial for the students of the institute.

The font size of the article ought to be 9.5. Also request you to mark one or two sentences that represents gist of the article. We will place it as 'break-out' box as it will improve readability. Also it will be great help if you can suggest some pictures that can be used with the article, just to make it attractive. Articles should be original and not previously published. All the articles published in the magazine are guided by EDITORIAL POLICY of the Institute. The guidelines and cut-off date for submitting the articles are available at

[http://actuariesindia.org.in/subMenu.aspx?id=106&val=submit\\_article](http://actuariesindia.org.in/subMenu.aspx?id=106&val=submit_article)

August 21<sup>st</sup> is celebrated as Actuaries Day to commemorate the birth anniversary of **Late Shri L. S. Vaidyanathan**. He was the first Fellow Actuary of India and one of the pioneers responsible for shaping the profession the way it is. This celebration instills a feeling of respect, integrity and ownership among the members of the Institute.

## Celebration of Actuaries Day in Mumbai

**Event:** Actuaries Day 2019

**Venue:** Hotel Sea Princess, Mumbai

**Date:** 21<sup>st</sup> August, 2019



The celebration in Mumbai started with the emcee, **Ms. Bhavna Verma** welcoming everyone to the event. **Mr. Sunil Sharma**, President of IAI, welcomed the Chief Guest for the event, **Mr. DVS Sastry** with a bouquet. The event proceeded with the lighting ceremony being presided by senior actuaries and dignitaries such as **Mr. MG Diwan**, **Mr. Rajagopalan V**, **Mr. DK Pandit**, **Mr. AP Peethambaran**, **Mr. DVS Sastry**, **Mr. Dinesh Chandra Khansili**, **Mr. Subhendu Bal** and **Mr. Sunil Sharma**.

### Chief Guest's Address by Dr. DVS Sastry

**Dr. DVS Sastry** headed the Department of Statistics &



Information Management and Monetary Policy Department of RBI, R & D Department of IRDAI. He also was the Chair Professor in the Central University of Rajasthan.

**Dr. DVS Sastry** thanked IAI for inviting him to the 2<sup>nd</sup> Actuaries Day celebration in Mumbai. He went on to talk about how the source of data was a big issue, due to which he established the Department of Statistics and Information Management Department in RBI. Dr. Sastry also termed actuaries as “demi-gods”, people who can find trends and make sense of the data. He concluded by highlighting the next step for the actuaries should be to work symbiotically with other departments, such as marketing or accounts, to take their skills to the next level.

### Presidential Address by Mr. Sunil Sharma

**Mr. Sunil Sharma** is the President of the Institute of Actuaries of India. He is a qualified Actuary and a Fellow Member of Institute of Actuaries, UK (FIA) and Institute of Actuaries of India (FIAI).

**Mr. Sunil Sharma** extended a warm welcome to all attendees of the 2<sup>nd</sup> Actuaries Day. He discussed in brief the journey of IAI: from its establishment in 1944 as the Actuarial Society of India (ASI), to being constituted as Institute of Actuaries of India (IAI) in 2006, to currently celebrating its Platinum Jubilee in 2019. Moving on, he highlighted the Institute's membership count for the Student, Associate and Fellow members.

As a way of taking the Institute to the next level of success, he laid down Five Big & Brave (B&B) Goals which the Institute will target to achieve over the next 3 years. These initiatives are as follows:

- To be a Well Recognized Profession amongst Public, Government and other Professional Bodies
- Target 30,000 student members by 2022



- Target 750 qualified Actuaries by 2022
- India Specific Study Material by 2021
- Leadership in:
  - Data Science and Analytics
  - Risk Analytics - Insurance, Banking & Finance
  - Enterprise Risk Management beyond insurance

To achieve these promising goals, he highlighted some of the areas the Institute will work on. Key focus areas were as follows:

- Increase the frequency of ACET Examinations
- Proactive engagement with Government Bodies to enhance awareness of actuarial profession and potential value that actuaries can add to various social sector schemes
- Proactive direct engagement with the Universities and colleges and enhance awareness about the Actuarial Profession as a career
- Market the Actuarial profession via digital media to attract best talent to take up Actuarial Profession
- Provide the profession's expertise into wider areas like Banking, Data Science & Analytics and Risk Management beyond Insurance
- Placement support at IAI

**Mr. Sharma** also launched numerous initiatives, starting with the launch of the Actuarial Job Portal (AJP), a powerful tool to connect employers of actuarial services with skilled actuarial resources, with free access being provided to both members and employers. The president encouraged young actuaries to update their details in the portal, which is available in their respective member login.

Next up, the Profession's Official Brochure was launched, which would enhance awareness about actuarial profession among the Students, Employers, Government Agencies and Other Professions. The Brochure would be available online and it would help to market the profession to the general public.

Thereafter, The Ideation Program was launched, a platform where members can submit their ideas which in

turn would help IAI in furthering its vision of growing the profession. Members would be able to submit their ideas on the institute website under member login. The President thereafter introduced the CSR activities initiated by IAI. These were as follows:

- **Student Support Scheme for Armed Forces:** This is to further IAI's vision to support the families of those who sacrificed their lives for the country. Under the scheme, existing Student Support Scheme benefits has been made more beneficial to next of kin of martyrs from defense and security forces, with the family income criteria being exempted for them.
- **Tree Plantation Drive:** The Drive Supports the Prime Minister's cause of saving tigers and protecting the environment at Sundarbans. Under the drive, IAI has planted a total of 621 trees, with each tree being dedicated to each Fellow, Associate and Staff members of IAI.



Continuing in tradition as the event last year, the Institute felicitated the senior IAI Fellow members who attained 75 years of age. This year, **Mr. V Rajagopalan** was felicitated. Mr. Rajagopalan reminisced on how the actuarial profession has helped him gain knowledge in various sectors like banking, risk management, etc. He thanked and acknowledged his seniors, colleagues and juniors.

The session was concluded with the launch of the IAI Corporate Video, which showcased who actuaries are, the sectors they currently work in, and the potential future sectors where actuaries can apply their knowledge.

The emcee, **Ms. Bhavna Verma**, thereafter called upon some of the senior actuaries to share their experience. **Mr. K Ganesan** supported **Mr. Sunil Sharma's** view of actuaries providing their knowledge in untapped sectors. He shared an occasion where he used his actuarial skills to provide an opinion to an individual whether he should invest in a new textile outlet or a sari

shop!! **Ms. Preeti Chandrasekhar** stressed upon the need for young actuaries for out of box analysis of the results generated by the spreadsheets which would help them to become a better actuary.

The celebration for the day were brought to a close with a vote of thanks by **Mr. Subhendu Bal**, Honorary Secretary of IAI.

Written by



**Mr. Siddharth Mohanty**



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“Mr. Siddharth Mohanty currently works in the Non-Life Actuarial Department of GIC Re.”

## Celebration of Actuaries Day in Gurugram

Event: Actuaries Day 2019

Venue: Ramada Gurgaon Central, Gurgaon

Date: 21<sup>st</sup> August, 2019

*“There are four types of people in the world. First, who want appreciation in life. Second, who want power and position in their life. Third, who want to make an impact in their life. And then there are people who make an impact and get power, position and appreciation in life. We call them Actuaries!”*

With this quote, the Actuaries Day 2019 at Gurugram began. Emcee **Gurpreet Babbar** briefed the audience about Actuaries Day celebrations.



Guest **Mr. Mohan Chutani**, former Economics Advisor.

The event witnessed presence of some very senior Actuaries (above the age of 75), **Mr. KK Wadhwa**, **Mr. AD Gupta** and **Mr. Y.P. Sabharwal**. It is a tradition to light a lamp first before starting any auspicious events or rituals. Light symbolizes the absence of darkness and Almighty's Divine Grace is spread all over by lighting the lamps. All five senior members were invited to light the lamp along with the Chief Guest.

The Chief Guest then presented keynote address. He shared his thoughts on how actuaries could work in wider fields like Ministry and Economic Planning and add value. He talked about the rigorous studies actuaries go through. He then inaugurated the Job Portal which is a new initiative by IAI. **Mr. Varun Gupta** presented him with a memento. Furthermore, Mr. Varun then gave a presentation about status of IAI, various initiatives taken by IAI and the Big Brave Goals the Institute has set for itself.



This was followed by playing a video message from the President, **Mr. Sunil Sharma**. **Mr. Varun Gupta**, SVP and AA at DHFL Pramerica welcomed and felicitated the chief



A couple of senior members shared their experience about their Journey to becoming an Actuary including **Mr. Pawan**, VP at DHFL Pramerica and **Mr Sachin**, Chief Risk Officer (CRO) at Max Life. **Mr Pravir Chandra**, Council member of IAI, felicitated all the senior

actuaries present.

In between the event, emcee Gurpreet kept the crowd busy by asking actuarial quiz questions and awarding chocolates on right answers.

The event was enjoyed by one and all.

Written by



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## Celebration of Actuaries Day in Hyderabad

Event: Actuaries Day 2019

Venue: Hotel Sheraton, Hyderabad

Date: 21<sup>st</sup> August, 2019

The Actuaries day was well attended with 57 participants from diverse background - Insurance Regulator's office, Insurance Companies, Banks, Non-financial Industries, Chartered Accountants etc.

actuaries to value financial assets. His advice to the younger attendees was that perseverance, patience and discipline are the core values that should be imbibed to get more success in the actuarial career.



**Mr S. P. Chakraborty**, FIAI, opened the programme by welcoming all the delegates. He explained the purpose of celebrating 21<sup>st</sup> August as “**Actuaries Day**”.

The same was followed by an Audio Visual message by **Mr. Sunil Sharma**, President of IAI, which mentioned the five Big and Brave (B&B) goals of the institute over the coming years, namely wider recognition of the profession; increasing the number of student members to 30,000; increasing the number of fellow actuaries to 750; development of India-specific study material; and leadership in data science & analytics, ERM beyond insurance and risk analytics in BFSI. The message also mentioned 7 upcoming initiatives of IAI.

**Mr. K Subrahmanyam**, senior Actuary was welcomed to deliver a speech on this occasion. In his speech, Mr. Subrahmanyam emphasized the need for actuaries to enter into wider fields of application - banking, data science, risk management etc., mentioning that the number of qualified actuaries compared to the population of the country is miniscule. He also highlighted IAI's thought on setting up an organization of valuers to enable



**Ms. J. Meena Kumari**, FIAI, felicitated **Mr. Subrahmanyam** with a memento and launched a professional video of IAI which highlights the role of actuaries.

Subsequently, **Mr. Subrahmanyam** launched IAI's actuarial job portal.



**Mr. Pankaj Kumar Tewari**, FIAI made a detailed

presentation related to “Actuaries Day”. The presentation started with the journey of IAI so far and covered various topics related to membership statistics, various initiatives of the institute namely job portal, conducting seminar online, 5 Big and Brave goals of the institute in the coming years etc. It was also mentioned that year 2019 marks completion of 75 years since formation of erstwhile Actuarial Society of India in 1944.

**Mr. C. Srinivasa Kumar**, FIAI, hosted a quiz, mainly based on the Actuaries Act, 2006.



The programme ended with Vote of Thanks by **Mr. DNKLNK Chakravarthy**, FIAI which was followed by High Tea and Snacks.

The programme was well conducted by **Ms. Anupam Bansal** as Emcee. She is a student member of the IAI.



**Mr. Sanjeeb Kumar**, former President of IAI, addressed the delegates present. He emphasized the need of recognizing and honouring volunteers, as the profession grows through volunteer activity. He highlighted that the actuarial profession is well respected profession. Addressing the young delegates, he advised them to spend significant time acquiring analytical and non-technical business knowledge, to work in non-core actuarial areas for a few years and to keep learning continuously.

**Written by**



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## Celebration of Actuaries Day in Bengaluru

**Event:** Actuaries Day 2019

**Venue:** Fairfield by Marriott, Rajaji Nagar, Bengaluru

**Date:** 21<sup>st</sup> August, 2019

In Bengaluru, the event was celebrated in grand fashion. The Actuaries day celebration was organized at Fairfield Marriot, Rajajinagar. Despite being a working day, members showed up in large numbers for the celebration. The event was graced with the presence of **Mr. N M Govardhan**, Actuary to Beema Samiti Nepal and a member of IRDAI, also the chief guest for the event. He brings with himself an experience of over four decades working across Africa, Asia and Europe in the insurance Industry.

**Ms. Purvi Rawal** was the emcee for the evening. The event began around 15:30 hrs, with a welcome address followed by the felicitation of the Chief Guest by **Mr. B N Rangarajan**, Chief Risk Officer and Appointed Actuary at Exide Life. The opening ceremony witnessed a lamp lighting activity by the Chief Guest and Senior Actuaries.



An Audio-Visual message from the President of IAI was played after his brief introduction. He outlined his vision towards the growth of the actuarial profession and

highlighted the steps taken by the Institute in that direction.

The Chief Guest was then invited for a speech which he began with a short prayer to Goddess Saraswati. He stressed upon exploring wider areas and was delighted with the President's vision and the initiatives taken by IAI. He also appreciated the revised curriculum introduced by IAI and urged student members to look beyond the traditional areas and foray into wider areas especially data analytics. He then inaugurated the Actuarial Job Portal, which sent waves of ecstasy among student members.



**Mr. B N Rangarajan** presented the various CSR initiatives undertaken by the Institute. The members appreciated the revised student support scheme and the plantation drive carried out by IAI in Sunderbans, West Bengal wherein; a total of 621 trees were planted equivalent to the number of Fellow, Associate Actuaries and IAI Staff. He then launched the Marketing brochure followed by the launch of the professional video. He emphasized the

importance of increasing the visibility and marketability of the Actuarial profession. Fellow members, **Mr. Sumit Ramani** and **Mr. Sabyasachi Sarkar** also shared their experience as actuaries and motivated students to tap non-traditional areas.

The event concluded with a vote of thanks by the emcee. All the guests then joined for hi-tea after a photo session. The volunteers - student members from IAI, Christ University students, the team from Pramatha and Exide life did a phenomenal job in making it a successful event.



**Written by**



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## Celebration of Actuaries Day in Kolkata

**Event:** Actuaries Day 2019

**Venue:** Hotel Auris

**Date:** 21<sup>st</sup> August, 2019

The Emcee, **Ms. Nidhi Kedia**, started off the auspicious event on the occasion of Actuaries Day by welcoming the Chief Guest - **Mr. Sumitra Purkayastha** (Head of Applied Statistics Department, Indian Statistical Institute Kolkata), Senior Actuaries - **Mr. Bhudev Chatterjee** (Consulting Actuary) and **Mr. N C Das** (Consulting Actuary), and the students. Then she invited **Mr. Sumitra Purkayastha**, **Mr. Bhudev Chatterjee** and **Mr. N C Das** to come forward and light the seven lamps to mark the beginning of the Actuaries Day event in Kolkata.

Post the lamp lighting ceremony, the emcee introduced **Mr. Sunil Sharma**, President of Institute of Actuaries of



India, and AV message from the President was played. The President wished everyone on the Actuaries Day and talked about **Shri L.S. Vaidyanathan** and his contributions towards the actuarial profession, the history of the institute, the 5 Big and Brave goals that the Institute has set out and the way forwards to achieve them.

The Chief Guest was then requested to share his thoughts on the actuarial profession. He appreciated the 5 Big and Brave goals set out by the President **Mr. Sunil Sharma**. He also talked about his memories of the early years when Indian Statistical Institute (ISI) and Institute of Actuaries of India (IAI) had joint collaborations. He highlighted the need to revive that collaboration between ISI and IAI to fulfil the emerging needs of the actuarial profession. He advised a few initiatives that can be jointly conducted initially - Short Academic Training Programs of duration 1-2 weeks or Short Term Projects.



Next, **Mr. Bhudev Chatterjee** came forward and motivated the students by assuring them on the ample scope that the profession has to offer. He also encouraged the students on continuing to write more exams.

After that **Mr. Ankush Agarwal**, who is a Fellow of



Institute and Faculty of Actuaries and is currently leading the pricing function at Reliance Health Insurance, delivered a presentation which talked about the history of the IAI, various initiatives that IAI had taken over the last year, 5 Big and Brave goals of IAI and the way forward. To name a few initiatives - implementation of new curriculum, the launch of the Actuarial Job Portal, Tree Plantation Drive, collaboration with other actuarial professional bodies, skill upgradation initiatives, etc. Mr. Ankush then concluded his presentation by launching the corporate video, which aims to answer every question that one might ask about the actuarial profession.

Then came the fun part - a sudoku game competition was conducted followed by a short quiz round and the winners were rewarded with chocolates.

Finally, the emcee marked the end of the event by giving vote of thanks to all the dignitaries present.

**Written by**



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## Celebration of Actuaries Day in Chennai

**Event:** Actuaries Day 2019

**Venue:** Hotel Ramada Egmore, Chennai

**Date:** 21<sup>st</sup> August, 2019

The Actuaries Day celebrations, which is one of the most anticipated event by the actuarial fraternity was held at Hotel Ramada, Chennai. Members of the Institute participated with passion and excitement which was evident from the number of attendees. More than 65 members attended and the Actuaries Day badge was distributed to all. **Mr. A.S. Sunder Raj**, Regional

Manager (P&GS), Life Insurance Corporation of India and **Mr. S. Venugopalan**, Chief Financial Officer, Chola MS General Insurance Company were the key dignitaries for the event. **Ms. V S Rajeshwarie** anchored the event.

The event started with welcome address followed by

prayer. Audio visuals containing IAI president's message for the Actuaries Day was played. **Mr. Sunil Sharma**, President IAI, in his message disseminated 5 big and brave goals to take the profession to next orbit.



**Mr. Sunder Raj**, Regional Manager at LIC, in his speech highlighted the fact that LIC laid the platform for many Actuaries who are now fully qualified to start their Actuarial journey. He expressed that the first step to reach the brave goal of 750 qualified Actuaries by 2022 would be having 500+ qualified Actuaries by the time the next Actuaries Day would be celebrated. He emphasized the fact that Actuaries' role is crucial in employing Data Analytics to solve business problems in Insurance industry. Mr. Sunder Raj narrated his most cherished experiences with his colleagues from the Actuarial department in LIC.

**Mr. Venugopalan** in his special address presented the overview of the General Insurance Industry ranging from history of the industry, the growth path till the present time and the industry scenario in past, present and future. He explained the top 10 drivers of profitability of the GI industry. He also highlighted that increasing demand for data driven analytics, particularly in a data driven industry like Insurance and the rising demand for Actuaries and their role ahead in implementation of IFRS 17, Actuarial expertise is pivotal in driving the business in sophisticated dimensions.



Senior Actuary **Mr. O. Lakshminarayana** was felicitated by the chief guest this year (he was unable to participate in the last year's event). The inauguration of Actuarial job portal was done by **Mr. Sunder Raj**. The audio visuals highlighting the features of the job portal was played. **Mr. R. Arunachalam** presented the achievements of the Institute, IAI membership statistics, IAI's initiatives over the last one year and vision for future.



The last session was delivered by **Dr. K. Sriram** on 'Education Curriculum 2019'. He explained the thought process behind the curriculum change. He indicated that the curriculum could be further improved to impart more knowledge on Data Science and Banking & Financial services. These changes may be implemented by IAI by offering certification courses on Data Science and IFRS 17 in future. He answered the questions of the participants at the end of his session.

There was a quiz contest arranged for the participants and two winners **Mr. Murali Krishna** and **Mr. Mahipal** were awarded with special prize. The event was concluded with a vote of thanks by **Mrs. Arthi Narasimhan**. She thanked all the senior actuaries, chief guests and the participants for their gracious presence.

# Thank You

**Written by**



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“ Mr. Sudarsan is a student member of IAI. ”

### Introduction

Most of insurers have geared up to implement IFRS 17 standards. In particular, lot of work has been going into development and tweaking of IT system, actuarial system, finance system and administration system alongwith integration and regression testing on the data storage, data transition, dry runs and results comparison with current IFRS4 standards.

Moreover, insurers are busy in setting up a new system for producing the financials for the first time under IFRS 17 regime during the transition phase.

The first and foremost priority of insurers is to be ready and compliant with IFRS 17 standard as clock is ticking on this project.

But have we ever thought that how would IFRS 17 results help us in getting an insight about the business written in the books of insurers and also help in formulating future business strategy of the insurer?

So to achieve above objective, let us deep dive into IFRS 17 and understand with its nuts-and-bolt.

### Nuts & Bolts of IFRS-17

So let us look at income statement produced under IFRS 17 standards.

Basically, IFRS 17 income statement is classified into two major parts viz Insurance Service Result and Finance Result.

Insurance Service Result is difference between Insurance Service Revenue and Insurance Service Expenses.

Insurance Service Revenue is made up of part of expected profit recognition (CSM recognised for the service provided during the year), expected loadings for claims and expenses and change in risk adjustments. All these components are driven by

actuarial calculations.

This means, Insurance Service Revenue will be driven by actuaries.

The second part of income statement, Insurance Service Expenses, will be driven by actual claims and expense experience.

### Inferences from the Income Statement

Looking at both parts simultaneously (i.e. Insurance Service Revenue & Insurance Service Expenses) provides an insight about how actual experience (viz mortality, persistency, expense, investment return, discount rate) has emerged during the year compared to expected.

This will help the insurer to relook at underwriting and claim policy in light of this information.

Moreover, in a long run, this information will also help actuaries to revise their actuarial assumptions for future projections.

This is similar to experience analysis (A/E analysis) for insurance related components (claims, expense, lapse etc) which is being regularly carried out by actuaries.

Similarly, Finance Result will give an insight about the actual investment income and expenses compared to expected.

In a long run, this will also help the insurer to relook at the investment strategy of the company.

Moreover, the architecture of management report will change significantly compared to existing structure.

In particular, management report will be driven new measurement matrix such as CSM, Insurance revenue, Insurance service expenses instead of annualised premiums or new business written.



## Income Statement under IFRS-17

### Insurance Service Revenue

- CSM Recognised for services provided
- Change in R.A. for non-financial risks
- Release of expected claims & other Insurance Service Expenses
- Recovery of Acquisition Cashflows

### Insurance Service Expense

- Incurred claims & other insurance service expenses
- Loss & reversal on onerous contracts
- Amount attributed to Acquisition Cashflows

### Insurance Service Result

- Insurance Service Revenue Less Insurance Service Expenses

### Finance Result

- Investment Income
- Insurance Finance Expenses

### Profit (Loss)

Insurance Service Results Plus Finance Result

This portion of the income statement will be driven by Actuaries

\* Reinsurance portion is not considered here. Above diagram is just for representation purpose only.  
Kindly refer the IFRS-17 documents for exact & comprehensive details.

## Mystified Questions...

After looking at the Income Statement, our mind may be rattled with lots of questions. Questions like whether higher CSM will lead to higher revenue thereby higher profitability? Or whether higher CSM will offset other parts of revenue such as lower level of expected claims & expenses recognised during the year leading to low levels of profits? Or profitability will entirely be driven by actual experience or based on some weightage between expected revenue and actual experience? Or something else..?

Just try to seek answers for the above questions.

In my next part of the article, I will discuss how the actual experience and actuarial assumptions for future projections will help formulate future business strategy of the insurer keeping in mind policyholders interest at the supreme level.

**Disclaimer:** The views expressed above are mine and not my current or previous employers. The above article is for education purpose only and views expressed here may not be valid and someone may not agree on the same. Kindly refer the IFRS-17 document for exact and comprehensive details

## Key points in the article

Insurance Service Revenue will be driven by actuaries.

The architecture of management report will change significantly compared to existing structure.

### Written by



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**Reading a book gives us the habit of solitary reflection and enjoyment.**

**The true teachers are those who help us think of ourselves.**

**Dr. Sarvepalli Radhakrishnan**



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#### **Health Insurance**

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Interested candidates can share their updated resumes with [shreya1@kpmg.com](mailto:shreya1@kpmg.com) for further communication. Please visit <https://home.kpmg/in/en/home/careers.html> to get to know more.

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