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Serving the Cause of Public Interest

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C O N T E N T S

"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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From the Desk of

the President

– Mr. Rajesh Dalmia

Dear Members,

I am really pleased to share that we have quite a few volunteers who are doing a great job. In fact, Institute of Actuaries of India (erstwhile Actuarial Society of India). owes a lot to the older generation of actuaries who contributed immensely to the profession, not only by doing work but also by money. Today, we are far better financially and volunteers are reimbursed all expenses. Further, recently council also approved that volunteers for organizing any seminar can also attend the same without any cost. We also started recognizing valuable contribution of volunteers by awarding them with a token memento. Institute bought an office space in Navi Mumbai which is now ready. Very soon, we will relocate to the new office premises at SeaWood in Navi Mumbai. That will also enable Institute to save on costly rentals that we currently pay. Even after buying the premises, our financials are quite healthy.

We recently held a planning meet at Lonavala, the first in the history of the Institute. A lot of advisory group and council members participated in the same. The meeting went quite well. Plan for the next year were discussed and everyone left with a positive energy to deliver on their promises. There was quite a few asks from the Institute which we will deliver so that these advisory groups can deliver on their promises.

We changed the pattern of ACET this year. ACET this year was not purely mathematics and statistics. We bought in the elements of English, data interpretation and logical reasoning. The idea was to make it a mix of ISI entrance exam and CAT. The question paper was designed by faculties from IIM and ISI. The pass rates dropped from 44% to 30%. One of the main reason was the sectional cut-offs. We created only two sections this time where English was merged with logical reasoning. Even though 30% were passed, yet the performance in English for the last guy who passed was not at acceptable level. We would further strengthen this by increasing the number of sections to three from the next diet so that English can get its due respect. Since, all our business communication is in English we cannot allow students with weak English.

There were lots of complaints regarding non provision of study material for ACET exam as Institute only lists reference study material with the syllabus. As far as I know almost all competitive exams do not provide any study material and only provides the syllabus and a sample question paper. We need to prepare students who can read from various books rather than just study material. In fact, in the older era, only syllabus used to be provided without any study material. It used to be very difficult in that era as there was no internet and one would have to go to various libraries to locate various materials. I myself

used to borrow books from my friends who were reading in different boards to broaden my learning. However, I do not see students focusing on learning a concept and rather see them just gleaning through the study material and solving a few problems irrespective of deeper understanding of the underlying concepts. The actuarial study material does not delve deep into theoretical issues and concepts and one needs to do a wider reading to have a better understanding of the same. It looks like with the advancement of computers and free information flow, we are hooked on to the readymade fast answers without getting into a deeper understanding of the same. The 2008 credit crisis was result of similar phenomena. If we do not want to repeat a similar mistake then we need to develop a deeper understanding of the concepts with underlying assumptions/limitations which can only be developed by wider reading and experimenting rather than limiting oneself to the core study material.

I have three more months to go before I vacate the office on September 18, 2016. There is still a lot of unfinished agenda and I would try to finish as many of them as feasible before I leave.

Even though delayed, monsoon is in and it is expected to be a rainy year. Enjoy the rains till we meet again next month.



From the Desk of

the Editor

– Mr. D C Khansili

Big / Data Analysis – A word of caution

Big data analysis is attracting good number of job opportunities for and including actuaries right from students to the fully qualified. Actuaries traditionally deal in data at times comprising of lacs of rows and 'n' numbers of columns. It was evident during #Y2K problem when it was unofficially learnt that in a life company's valuation programme more than 2 million YY were changed to YYYY. Actuaries in the past and present competed successfully with other professionals be it finance, investment, general management, IT, HR, marketing and sales etc. Now a construction Actuary story has been carried in the Actuary UK magazine. Thus Actuaries have good knowledge of wider areas and so not confined to actuarial only.

A natural question arises- why the word of caution through editorial of the Actuary India amidst new opportunities. The social media has already emerged as a powerful medium of expression and younger generation is making best use of it. An eminent insurance professional brought back to the social media a sepulchred topic of year 2011 when an insurance company carried a study of claims based on zodiac signs. To gauge the authenticity of the zodiac based study of claims was important. Post searching various websites and reading the related material including published by daily mail, got fair idea that information appears to be correct. The website also carried the news that the results of study were followed by series of agitations in that country. There were numbers also available in the website. The total number of 17, 01,704 claims were studied. The results showed that only 1.6% of total claims pertained

to a particular zodiac while highest was 12.4%.

Post publication of the results of the study, the spiral impact was seen in other fields. E.g the advertisement for employment started appearing- 'we only employ workers born under specific star'. This was good for the society that agitations led to abandoning the implementation of the results.

The said study though buried yet we can't stop its surfacing on periodical basis in this information led era. The learning from the episode is to go to fundamentals of the actuarial science regarding data analysis. The foundation of actuarial profession is that it serves the public interest. Subsequently the first formal lesson taught is that before conducting a study an actuarial personnel should ask the question- what is purpose of the study? Once getting satisfied with the objective, the next question addressed is that whether data is credible. The credibility theory suggest the minimum number of observed data. Further, Actuary's confidence in data is important. One statistics book questions the use of complex statistical models, studies and discussions carried out on the data gathered by the village postman who does not know why and for what purpose the data is being collected and at times he fills the form on his own. The data validation is important process at Actuarial Department before using it in the model. The consistency and ratios calculated throws many errors. The Actuary does not depend wholly on the model but uses its judgment, i.e. Common Sense. Then monitoring of results is important before using the results.

The zodiac based study fails the test at first stage of 'serving the public interest'. The file and use specifically ask – the target market. The Company could have examined the proposal before carrying out the study whether they could bring a product targeted to particular zodiac. Whether any regulator would approve such product?

The purpose of study is important. If a life company undertakes study on Top Ups in unit linked business. Generally these are less than 1% of total premium. Once basic structure for study is in place, one can make 'n' numbers of studies. Product wise, single premium- regular premium, rural- urban, Life and pension, premium size, payment mode, sales channel wise etc. etc. At times there are smaller cells which contains one or two policies and the outcomes are of not much relevance.

These messages are important to be carried forward by the actuarial professionals when talking big data analysis and hence the word of caution. The world has adverse experience of ONLY model based results during latest economic down-turn.

The edition is carrying good number of information. Standard KYC, advice to Actuaries to keep abreast with development in medical science, happening on on-line space elsewhere and data analysis are important.

The Actuary India is getting good response from regulator office, CEOs, Actuaries at different levels and other professionals. Please keep on supporting so that your magazine serves a platform for information sharing for and from top echelons!!!■

7th Capacity Building Workshop on GLM Pricing Techniques and Excess of Loss Pricing Skills



The Indian General Insurance (GI) industry has seen a rapid growth since 2000 (CAGR of over 15%), and the total premium of the GI industry is expected to touch \$13.5 billion by the end of 2016-17 FY. Out of all the product categories currently present in the industry, Motor and Health products dominate the market with close to 70% share of the gross premiums written under these categories. Keeping this rapid growth of business in mind along with the growing competition in the GI industry, it is becoming imperative for the insurers and actuaries to deploy cutting-edge technologies to arrive at reasonable prices for their products that enhance their overall performance in the market.

The 7th Capacity Building Workshop on GLM Pricing Techniques was organized with an intent of building / strengthening the actuarial skills within the GI domain with the primary focus to equip the attendants with better technical skills through hands-on training on modelling tools ('R').

A session was also organized on stochastic reserving which focussed on the importance of analysing the variability of the reserves and using MS excel to carry out stochastic Bootstrap method.

The workshop was declared open by Mr. Debashish Banerjee – Director, Deloitte Consulting LLP. In his address he welcomed all the participants and shared the agenda for 2 days of the workshop. He emphasized that the workshop be taken as a learning platform and encouraged everyone to be interactive during the sessions. He also introduced his team of 5 associates from Deloitte, who took the participants through R and GLM techniques during the 2 days of the workshop. Debashish also introduced Mr. Sourav Roy – Head (Actuarial Department), Shriram General Insurance Co. Ltd. for his session on Stochastic Reserving at the end of Day 1.

Organized by: Advisory Group on General Insurance, IAI

Venue: The Pillazio Hotel, Gurgaon

Date: 3rd– 4th June, 2016

Day 1: 3rd June 2016

Sessions: Usage of R in the industry and Introduction to R

Speakers: Mr. Abhimanyu Dasgupta – Manager, Deloitte Consulting LLP and Mr. Priyam Banerjee – Senior Consultant, Deloitte Consulting LLP

The idea of these sessions was to check the pulse of the audience as to the extent of their knowledge on R and other modelling tools. Abhimanyu also emphasized on why R can be a useful GLM modelling tool such



as the fact that R is an open source platform and hence, the users can post their scripts for free and contribute towards additions / modifications to the software. Hence, it provides the flexibility to the users to design their own libraries / packages. Priyam took the participants through the history of R. It was mentioned that all downloadable programs of R, are tested and proven.

There was also a brief discussion about the importance of Data science in the actuarial industry. The talk revolved around the uses of data mining and analytics in the GI industry such as underwriting, pricing / rate making, claims analytics, fraud detection, retention modelling, cross-selling, up-selling, customer segmentation etc.

The speakers also elaborated on R based software applications such as R-Excel in which R is connected to excel at back-end. It was also mentioned that R is a case-sensitive tool and for any help regarding the syntaxes that can be used in R, the users can refer to rseek.org (search engine) and rproject.org.



Session: Hands-on with R

Speaker: Mr. Abhishek Kuppili – Consultant, Deloitte Consulting LLP

Though the session was led by Abhishek, he was joined by all the other speakers to give a hands-on training on R to the participants. He introduced R studio interface to the participants and the role of each of the sections on the interface. He also illustrated basic mathematical operations in R along with some other basic actions such as changing the working directory in R, commenting out a section of the code etc. There were elementary functions that were introduced to the audience which can help them to define an array, or view the datasets and variables already



defined, or outputting the data into an external file. Matrix multiplication was also introduced in this session.

The session proved useful for the participants as most of the participants were first time users of R. Some of them also faced issues to start / install R in the first place, to which the team responded by helping them install R and providing them the example databases promptly.

At the end of the session, an exercise was distributed to all the participants. The exercise contained questions panning from basic mathematical functions to matrix operations to reading the data sets and carrying out operations on them.

Session: Introduction to GLM

Speaker: Mr. Kranthi Nekkalapu – Senior Consultant, Deloitte Consulting LLP

Kranthi introduced Generalised Linear Model (GLM) to the participants. He talked briefly about simple regression and its limitations. He apprised the participants on how GLM's provide an advanced regression technique taking care of the limitations that we face in simple regression. The way GLMs are defined, gives users flexibility to have any specific error structure depending on the distribution of their response variable. He illustrated how the link function, used to define a GLM, bounds the response variable's value to the expected output range. Kranthi used screenshots of the examples that were specifically made for this session to illustrate the efficiency of GLMs.

In addition to the GLMs, various response variables and their distributions were discussed, such as, claim numbers following Poisson distribution, average claim costs generally following a positively skewed

continuous distribution (eg: Gamma) etc. There was a discussion on how combined data of the policies and claims of a GI company will have policies with no claims at all. Hence, if we were to model the claim cost for such data, we can use Tweedie distribution. Tweedie distribution is defined in a manner so as to have a combination of Poisson and Gamma distributions.

Other topics discussed were R-square %, deviances, parameter estimations etc.

The session was interactive and insightful for the participants with active involvement from all, with respect to queries and answers.

Session: Assignment – R Basics and Programming

Speaker: Mr. Abir Sinha – Business Analyst, Deloitte Consulting LLP

The participants were requested to attempt the exercise that was distributed to all before-hand. Abir took the participants through few initial questions step by step. The questions were focussed on introducing how to define functions in R and how to carry out operations on arrays to get the desired results. The other team members from Deloitte also helped the participants with the assignment.

Participants were able to solve the questions with some help and guidance from the team which helped infuse some confidence in them with respect to R.

Session: Stochastic Reserving

Speaker: Mr. Sourav Roy – Head (Actuarial Department), Shriram General Insurance Co. Ltd.

The session started with introducing the audience to variability analysis. Sourav elaborated to the audience that there are three ways to capture reserves variability - deterministic, analytical and stochastic and the complexity of the outputs will depend on the methodology selected. A brief introduction on different variability approaches was given, however, the session was focused on simulation-based bootstrap method. The participants were explained different

types of uncertainties present in the reserve analysis such as model uncertainties, estimation uncertainties and process uncertainties.

The participants were equipped with a sample dataset in MS excel beforehand to go through the calculations of the bootstrap method. Sourav gave the participants a first-hand experience on the exercise that involved carrying out chain-ladder method, calculating residuals, rescaling and resampling of residuals and arrive at various simulations. He covered all the steps that are involved in a complete bootstrap exercise to calculate the reserve variability.

Day 2: 4th June 2016

Session: Assignment – R Basics and Programming

Speakers: Mr. Abir Sinha & Mr. Abhishek Kuppli

The participants continued with the assignment, covering the questions on matrices, multiplying them and modifying them, simulating distributions, fixing seed for the simulations.

After some basic practice on the above, the speakers asked the participants to move on to a bit complex exercises such as creating data frames, summarizing them, viewing their properties etc. Some more functions such as those used to calculate percentiles or to cap the values were put into practice. Post some practice on such functions, the users were asked to import the sample datasets provided into R, for the next set of questions in the assignment and also to enable them to use GLM in R.



Session: Introduction to an insurance specific case study and GLM applications

Speaker: Mr. Abhimanyu Dasgupta

In this session, Abhimanyu briefed the audience about the case study that was to be covered during the day to implement GLM modelling in R. Using the dataset provided, he illustrated how the datasets from a GI company might look like and how should the users go about analysing the same. He stressed on the fact that there might be a number of factors available in the data but what factors are to be used or can be used depends on the quality of data as well as the importance of the factor in terms of its impact on the response variable.

Some major steps in optimising the current factors, as mentioned by Abhimanyu, were:

- Data Preparation – involves working on the data structure, target variables, selecting rating variables for modelling, exposure adjustments, loss adjustments and generating interaction variables
- Normalisation – which involves eliminating the impact of one variable
- Adjusting exposure – involves determining the variables to be adjusted out, determining adjustment factors etc.
- Plan factors for the modelling class – involves deciding on the GLM structure and corresponding model design, output interpretation and model adjustments

Post this introduction, the participants were given a hands-on experience of building a GLM on a sample dataset in R. They were made to work on building a property damage model from the dataset, using adjusted losses and adjusted exposure. The model was to be a tweedie model including factors such as Driver Age, Vehicle Use, At-fault accidents (AFA), multi-car discount etc.

A snapshot of a sample GLM was used to demonstrate the interpretation of various factor levels, intercept and to calculate risk relativities using inverse link functions. Abhimanyu and his team also guided the participants on how to plot the GLM residuals in R to validate a model.

The session ended with a vote of thanks from Abhimanyu to the participants for making the seminar cum workshop, interactive and successful. Mr. Sharad Ramnarayan – Appointed Actuary, The New India Assurance Co. Ltd. thanked the speakers for sharing valuable insights and disseminating knowledge on R. He presented mementos to all the speakers for their contribution to the seminar.

Overall, the various sessions held during the seminar focussed on giving a practical experience to the participants on using R and GLMs and



the environment was made conducive for active interactions amongst the speakers and the audience. The queries from the audience ranged from issues with installing R to interpreting the results from GLM and the speakers addressed them with sheer and enthusiasm. The session on stochastic reserving was insightful and helped audience gain knowledge on the intricacies behind a bootstrap. ■

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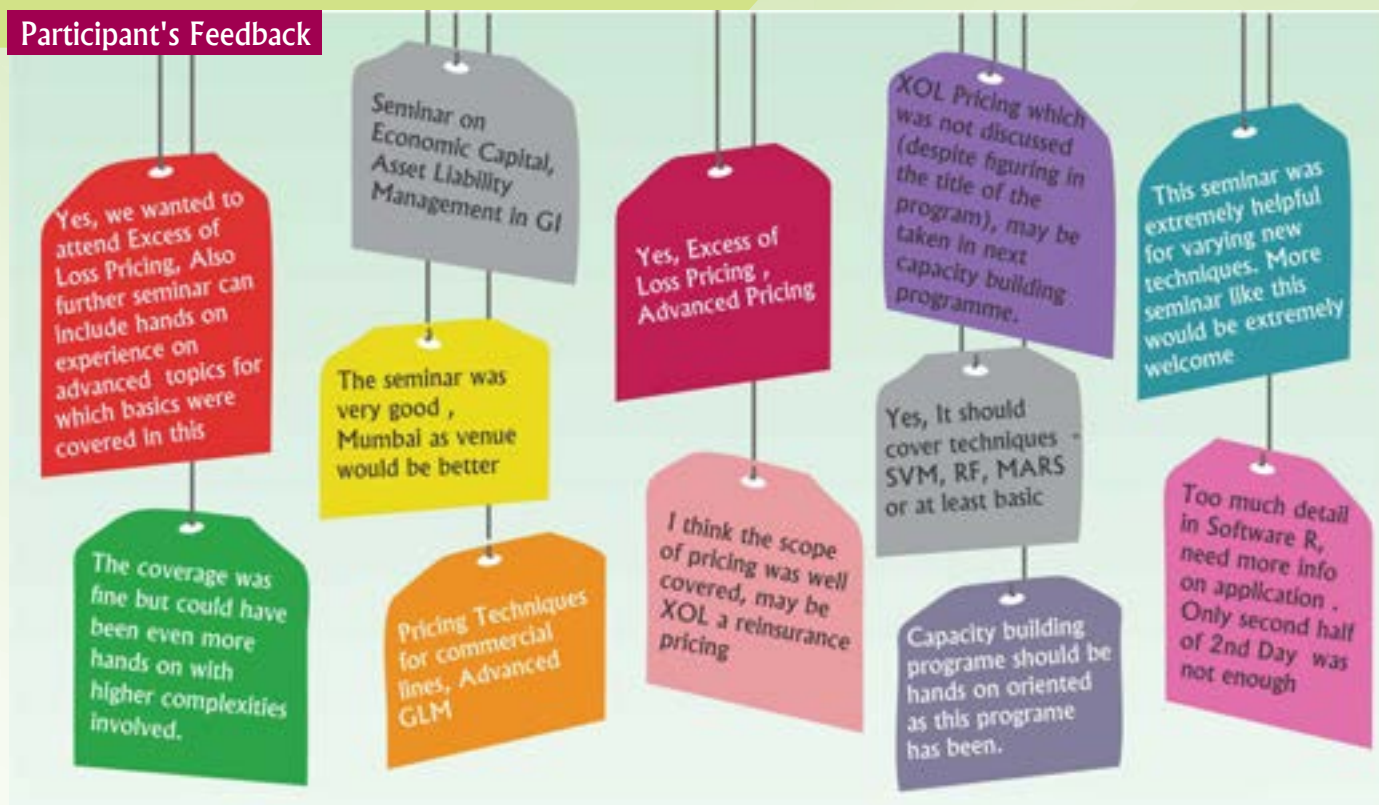
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Participant's Feedback



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The Actuary India – Editorial Policy (Version 2.00/23rd Jan 2011)

A: "The Actuary India" published monthly as a magazine since October, 2002, aims to be a forum for members of the Institute of Actuaries of India (the Institute) for:

- Disseminating information,
- Communicating developments affecting the Institute members in particular and the actuarial profession in general,
- Articulating issues of contemporary concern to the members of the profession,
- Cementing and developing relationships across membership by promoting discussion and dialogue on professional issues,
- Discussing and debating issues particularly of public interest, which could be served by the actuarial profession,
- Student members of the profession to share their views on matters of professional interest by way of articles and write-ups.

B: The Institute recognizes the fact that:

- there is a growing emphasis on the globalization of the actuarial profession;
- there is an imminent need to position the profession in a business context which transcends the traditional and specific actuarial applications,
- The Institute members increasingly will work across the globe and in global context.

C: Given this background the Institute strongly encourages contributions from the following groups of professionals:

- Members of other international actuarial associations across the globe
- Regulators and government officials
- Professionals from allied professions such as banking and other financial services
- Academia
- Professionals from other disciplines whose views are of interest to the actuarial profession
- Business leaders in financial services.

D: The magazine also seeks to keep members updated on the activities of the Institute including events on the various practice areas and the various professional development programs on the anvil.

E: The Institute while encouraging stakeholders as in section C to contribute to the Magazine, it makes it clear that responsibility for authenticity of the content or opinions expressed in any material published in the Magazine is solely of its author and the Institute, any of its editors, the staff working on it or "the Actuary India" is in no way holds responsibility there for. In respect of the advertisements, the advertisers are solely responsible for contents of such advertisements and implications of the same.

F: Finally and most importantly the Institute strongly believes that the magazine must play its part in motivating students to grow fast as actuaries of tomorrow to be capable of serving the financial services within ever demanding customer expectations.

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International Actuarial Association Life Section Colloquium 2016



Organized By: International Actuarial Association (IAA) and the Actuarial Society of Hong Kong (ASHK)

Venue: Hotel Conrad, Hong Kong

Date: 25th – 27th April '16

Theme: Insurance Evolution: Change is the only Constant

The International Actuarial Association Life Section Colloquium 2016 was attended by the leaders of the insurance industry and the actuarial profession from over 20 countries across the globe. There were around 230 delegates including leaders of the insurance industry and the actuarial profession. On the evening of 25th April 2016 the welcome dinner hoisted provided opportunity to interact with the participants, discuss and exchange views and share experiences about the business environment, markets, challenges and regulatory considerations in their respective countries.

The colloquium started on 26th April 2016 where **Mr. Roddy Anderson**, Chief Executive and Local Controller, Hong Kong Branch and Past President of Hong Kong Federation of Insurers, welcomed the gathering.

The opening keynote speech was presented by **Prof. KC Chan**, Secretary

for Financial Services and the Treasury, Hong Kong Special Administrative Region (HKSAR). He highlighted the significance of Hong Kong as an international insurance centre. This was followed by an engaging session by **Mr. John Leung**, Commissioner of Insurance, OCI, HKSAR on evolving regulations and the opportunities and challenges it creates for Hong Kong's Life Insurance Industry.

Ms. Ka Man Wong, President of ASHK and **Mr. Fred Rowley**, Immediate Past President of IAA discussed how waves of regulatory changes, heightened customer demand and dynamic economic environment have created significant opportunities for the industry.

Panel discussion on trends in solvency supervision by **Mr. Rob Curtis** (KPMG), **Mr. Paul Melody** (Willis Towers Watson) and **Mr. Jonathan Zhao** (E&Y) provided an international perspective on solvency and capital management and the challenges currently faced. **Mr. John Maroney**, from International Association of Insurance Supervisors also added significant value to the discussion.

Carrying the overall theme of **Insurance Evolution: Change is the only Constant**, the conference



recognized that the insurance industry is continuing to evolve to meet the needs of its customers, and how the role of the actuary is changing and adapting within this. The wide range of topics from risk, capital and value; products, markets, customers and distribution; data, analytics and technology to regulations and actuarial professional ethics were of importance.

Big Data and analytics has been the buzz word all over the globe and there were a couple of sessions to discuss the same. An intriguing session by **Mr. Paul Melody** (Willis Towers Watson, Hong Kong), discussed how Predictive Modeling for Life Insurers is emerging as a business advantage or an unnecessary complexity. **Ms. Richa Mathur**, India highlighted how data and analytics aid in providing solutions for insurance companies to continue to thrive in an environment marked by growing change and competition. The presentation discussed the need for insurers to focus on the need to expand the capabilities to adopt the emerging best practices in analytics. A thought provoking session on the use of predictive analytics in life underwriting was conducted by **Mr. Allen Klein** (Milliman, USA).





Other parallel sessions covered various topics critical to the actuarial field today. **Mr. Andres Webersinke** (General Reinsurance Life Australia Ltd.) made a presentation to discuss if terminal illness is emerging as the new major critical illness. **Prof. Knut Kristian Aase** from Norwegian School of Economics, Norway described an economic theory on analyzing “optimal” pension plans that supports stable pensions.

The second day of the colloquium had a lot to offer as well. It started with an interactive panel discussion on “Actuarial insight and business management” by **Mr. Chris Howells** (Schroders), **Mr. Garth Jones** (AIA) & **Mr. Yuan Siong Lee** (Ping An Insurance). The discussion was a fine blend of knowledge and experience and provided a deep understanding on the current scenario of the life insurance industry.

An engrossing session on the evolution of the life insurance market in Japan was taken by **Mr. Michael Freeman** (Willis Towers Watson, Japan). It described the significant transformation experienced by the Japanese life insurance market over

the last 20 years.

Dr. Séverine Arnold (University of Lausanne, Switzerland) presented an interesting session on the heterogeneity of human populations described by the mortality dynamics. Other parallel sessions included current topics like the impact of the low interest rate environment on life insurance companies. The presentation described the challenges which life insurance companies operating in a low interest environment have to face and the impact on product design and distribution. Case studies of the German and the Japanese life insurance markets provided clarity on the stress on life insurance companies and highlighted the problems faced by insurers who have sold policies with high long-term guaranteed fixed interest rates in the past and doubts about the sustainability of the current product landscape that have appeared.

Another relevant topic discussed at

the colloquium was the investment implications of Guidance Note 16 for insurers operating in Hong Kong by **Mr. Alan Yip** (J.P. Morgan Asset Management) and the emerging online products, markets, customers and distribution.

Last but not the least was a panel discussion on managing longevity risks in Asia by **Prof. Koon-Shing Kwong** (Singapore Management University) and **Prof. Johnny Li** (The University of Waterloo, Canada). It provided an understanding on how longevity risks can be mitigated in China through capital market solutions.

All the sessions were indeed interactive and well received by all making the colloquium a grand success. It provided a broad perspective of the changing insurance landscape and presented a forward looking perspective on how the life insurance sector may evolve in future. ■

About the author

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 Life & Health Insurance

 Aviva Life Insurance Company



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Mr. Sumit Dutta has joined Max Life Insurance as Vice President - Product Pricing. He joins Max Life from Swiss Re, Mumbai where he was employed as Product Actuary. Mr. Dutta is a fellow member of the Society of Actuaries(SOA).

Mr. Dutta has overall 15 years' industry experience in the area of product development, pricing, valuation. Prior to Swiss Re, he worked with GE Capital in the area of valuation, ALM, experience analysis, analytics projects. He will be based in the Gurgaon office



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The Insolvency and Bankruptcy code, 2016

- A new era of corporate reform



Background

In the “ease of doing business index” 2015 issued by World Bank group, India ranks a dismal 130 among 189 countries. It is a benchmark of the regulatory environment vis-à-vis other countries in 11 areas in the lifecycle of business from commencement, to operation, to exit. One of the several contributing factors in the ranking includes Resolving insolvency where India is ranked 136. According to the report, it takes 4.3 years to resolve insolvency in India, and the recovery rate is a lowly 25.7%, against 1.7 Years & 72.3% respectively for OECD High income countries. The data is based on study of Mumbai and Delhi, and any business person in India would know it is much more pitiable in other parts of the country.

India is world’s seventh largest economy in terms of GDP (nominal) and third largest in term of GDP (PPP). However it ranks a dismal 141 when it comes to per capita GDP. This is despite an impressive average GDP growth rate of 7.8% over last decade. India would need to sustain the high growth rate for years to come, along with several socio-economic reforms so as to improve the per capita GDP. It is therefore crucial for India to make more business friendly environment so as to attract foreign investments, and insolvency and bankruptcy regime is one of the critical requirements for the same. Further the banks in India are facing a deluge of stressed assets. Stressed asset ratio peaked to 11.1% in Fiscal year 2015 amounting to c. 8 lakh crore which is 5.6 % of India’s GDP), and it needs immediate attention to treat viable and unviable

businesses separately and arrest value deterioration.

The current regime is inconsistent, incomplete and ineffective in dealing with insolvency, recovery, revival and liquidation issues, giving rise to a plethora of litigations which remains unresolved for a significant period of time resulting in erosion of economic value of the enterprise. There have been multiple attempts in the past to introduce a comprehensive regime on Insolvency & bankruptcy and various committees have been formed for the onerous task. But so far the efforts haven’t borne fruits and the recommendations didn’t translate into the legislation. In light of these, the Government of India had formed the Bankruptcy Law Reforms Committee chaired by **Dr. TK Vishwanathan** in August 2014 to study the bankruptcy framework and it paved the way for legislation of “**The Insolvency and Bankruptcy code, 2016 (IBC)**” amongst several other reforms being contemplated by the incumbent government. The IBC has been passed by the Parliament on 11 May 2016 and notified in the official gazette on 28 May 2016.

Existing framework for insolvency, revival, recovery, winding up

Currently Individual insolvencies are covered under The Presidency Towns Insolvency Act, 1909 (PTIA) and The Provincial Insolvency Act, 1920 (PIA). The winding and dissolution of LLP is covered under chapter XIII of the Limited liability partnership Act, 2008. For corporates, Part VIA (Revival and Rehabilitation of sick industrial companies) and Part VII

(Winding up) of the Companies Act, 1956 is applicable and is administered by an Official liquidator under the supervision of the respective High Court. Chapter XIX and Chapter XX of Companies Act, 2013 also contains provisions for Rescue and rehabilitation, and Winding up respectively but these provisions have not been notified. Further the adjudication power under the Companies act, 2013 rests with National Company Law tribunal (NCLT) and National Company Law Appellate Tribunal (NCLAT), the setting up of which were provided for in the Companies (Second Amendment) Act, 2002, and are currently in the process of formation. Also Section 391 of CA, 1956 provides for a scheme of arrangement or a compromise with the creditors and/or members which a company can enter into.

In addition to these there exists The Sick Industrial Companies Act, 1985 (SICA) that deals with rescue and rehabilitation of Industrial companies defined under the act and administered through Board for Industrial and Financial Reconstruction (BIFR). It also constituted Appellate Authority for Industrial and Financial Reconstruction (AAIFR) for hearing appeals against the orders of the BIFR. It has been repealed by the Sick industrial companies (special provisions) repeal act, 2003, but is pending to be notified. Further The Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002 (SARFAESI) empowers banks and other financial institutions to attach secured assets/collaterals and sale or manage them without the intervention of court. It gave birth

to specialised resolution agencies in the form of Asset Reconstruction companies (ARCs). It is supplemented by The Recovery of debts due to banks and financial institutions act, 1993 which was passed to establish Debt recovery tribunals (DRT) and ensure expeditious adjudication and recovery of dues to banks and financial institutions. Creditors not covered under the above legislations can file recovery suits under Code of Civil Procedure.

In addition to the legislative framework, certain non-statutory guidelines have been issued by RBI time and again for treatment, revival and management of stressed assets, which include: Corporate debt restructuring, Joint lenders forum, Strategic debt restructuring. Several other acts and guidelines interface with each other on the subject of insolvency, bankruptcy and recovery.

It is also worthwhile noting that "Bankruptcy & Insolvency" is an item listed under Concurrent list of the Constitution; therefore both centre and state government can make laws for this subject. There are several state relief undertaking acts which applies the law to protect select companies/businesses, and which can jeopardise creditors' actions regarding winding up or recovery under other laws. For instance, Dunlop India in 2014 was granted a 'relief undertaking' status by the West Bengal government providing immunity from the winding up petition of the creditors.

It is apparent that the existing legislative framework consists of a complex maze of multiple laws, guidelines, and adjudicating bodies which doesn't fit together into a cohesive framework and sometimes overlaps each other's mandate and jurisdiction. This causes uncertainty of interpretation, misuse by defaulters and delay in resolution resulting in erosion of economic value of the enterprise.

What changes does the IBC bring?

The IBC aims to streamline and consolidate all related laws and

shall become a comprehensive and overarching legislation applicable to all companies, individuals and partnership firms. In order to do so the code has repealed the archaic laws of PTIA, 1909 and PIA, 1920, and amended relevant sections of 11 other acts. It is however not applicable to financial entities. The insolvency of financial firms shall be covered by the "Indian Financial Code" which is being worked upon by Financial Sector Legislative Reforms Commission.

The code envisages creation of new institutional infrastructure comprising of four major pillars. First is the formation of a new regulatory body (**Insolvency and Bankruptcy Board**). The Board members shall consist of officers of central government, RBI nominee, and other members nominated by central government. The Board shall be responsible for regulating and monitoring the intermediaries and the insolvency process and make necessary bye laws. Second is using existing adjudicatory institutions of **NCLT/NCLAT** for corporate insolvency and **DRT/DRAT** for non-corporate insolvency. Third is licensing and regulation by board, of **Resolution and Insolvency professionals** who shall be private professionals with specialized skills of managing sick companies. These professionals would act as liquidator/bankruptcy trustee and shall replace the board of directors of the company and report to the creditors committee formed for the purpose of resolution or liquidation. Fourth is the formation of **Information utilities (IUs)** as a centralised repository of financial and credit information of the debtors which shall be regulated by the Board. The information to IUs shall be provided by the creditors on an ongoing basis.

Key provisions of the IBC

Corporate insolvency resolution process

The code allows a financial creditor, an operational creditor or the corporate debtor itself to initiate corporate insolvency resolution process by filing an application to

the adjudicating authority in case a payment is defaulted. **The focus of the code is on speedy resolution and execution as it sets a timeline of 180 days for the completion of resolution process from the date of admission of the application, with an additional extension of further 90 days if approved by 75% voting of creditors in value.** The failure to get the resolution plan approved by the creditors and sanctioned by the adjudicating authority shall result in liquidation proceedings. During the period, the management of the affairs of the debtor and powers of the board of directors (BoD) shall be vested with the Resolution professional, appointed by the creditors. The code also allows the adjudicating authority to declare moratorium on the debtor's operation during the resolution period, thereby prohibiting or putting stay on any suits, judicial proceedings, asset transfer, foreclosure or enforcement of security interest, recovery of property, and termination of supplies of essential goods, and services to the debtor. This is a welcome relief as it makes resolution process free from obstructions by multiple litigations as is the case currently.

The code also provides for Fast track corporate insolvency process (i.e. within 90 days) for those debtors whose assets and income is below a level as may be notified.

Liquidation process

Adjudicating Authority will pass an order for liquidation of the debtor if either the resolution plan couldn't be agreed or the creditors resolve to opt for liquidation. The resolution professional may act as the liquidator, and all the powers of the BoD shall be vested with such Insolvency professional. For the purpose, the liquidator shall form an estate of the assets, and consolidate and verify claims of all creditors. The code gives option to the secured creditors to either, (a) relinquish its security interest to the liquidation estate and receive proceeds from the sale of assets as per the order of priority set

out in the code, or (b) enforce and realise its security interest. However when the enforcement of the security interest yields an amount in excess of the dues, the creditor shall tender to the liquidator any surplus funds received. However if the realised value of security is lower than the dues, the remaining portion shall be paid in the order of priority after the payment of unsecured creditors.

The code also provides for Voluntary liquidation the request of which can be made by the debtors along with a declaration from majority of the directors, followed by a special resolution of the members in the general meeting, provided that creditors representing two-thirds in value of the debt of the company shall approve the resolution.

Order of priority of distribution of assets

There has been a remarkable change in the order of priority with government dues pushed down the order. After meeting insolvency resolution process costs, the code puts workers' interest at the top *pari-passu* with the secured creditors who chose to relinquish their rights over security. However a cap of 24 months dues is put for the worker's dues, the balance, if any shall be prioritised after government dues. This is followed by dues owed to other employees for the period of 12 months, and then unsecured financial creditors. **Interestingly the government dues are ranked after unsecured creditors pari passu with the debts owed to a secured creditor for any amount unpaid following the enforcement of security interest.** Any remaining debt and dues shall be paid thereafter. Surplus, if any shall be distributed to preference shareholders and equity shareholders in that order.

Insolvency resolution and bankruptcy for individuals and partnership firms

The code provides for a distinct process called "Fresh start process". An individual debtor, who is unable to pay his debt, and whose gross annual

income does not exceed Rs 60,000 and aggregate value of the assets does not exceed Rs 20,000 and aggregate value of qualifying debts does not exceed Rs 35,000, may apply for a fresh start financially and shall be discharged of the qualifying debts as specified. The debtors shall enjoy the moratorium similar to corporate debtors for 180 days.

For other individuals and partnerships, an insolvency resolution process may be initiated by the creditor or the debtor, and agree on a repayment plan supervised by a resolution professional. It shall however require approval of 75% vote of creditors in value. If the Repayment plan couldn't be implemented an application for bankruptcy can be filed by creditors or debtor, and propose an insolvency professional as Bankruptcy trustee.

Where the debtor is a partner of a firm, all or majority of the partners of the firm have to file the application jointly.

The order of priority of distribution of assets is similar to corporate liquidation except that all unsecured creditors (financial or operational) is ranked below government dues. The rationale for such difference in order of priority of government dues for Corporates and individual is not clear.

Disqualification and Restriction of bankrupt

A bankrupt shall be disqualified from being appointed as a public servant or elected to any public office or a member of any local authority. This will ensure that politicians and bureaucrats who become insolvent would be disqualified from holding public office. Further a bankrupt is debarred to act as a director of any company.

Cross-border insolvency through bilateral agreements with other countries

The Code allows the central government to enter into an agreement with the Governments of any country outside India for

enforcing the provisions of this Code, hence paving the way for cross-border insolvency regime in years to come.

Key challenges

Creditor in possession- The code provides for vesting of management power with the Resolution and insolvency professional who will act on behalf of the creditors. There would be sudden and tectonic shift of power from Equity to Debt once the insolvency is triggered, and **the focus and onus of revival of a company would shift from debtor to creditor.** This is in contrast to the current regime where lenders wouldn't participate in the operational restructuring of the business and takes recourse to recovery, security enforcement, and debt restructuring. This is similar to the "Creditors in possession" approach in UK, as compared to the "debtor in possession" approach in followed US. While the creditors can decide, in the resolution plan, the role of the debtor's management, but it would be extremely difficult for the Insolvency professionals to be able to monitor, manage and engineer a turnaround of the complex activity called business without involving the debtor or promoters. There may be massive value erosion if business is not managed properly. It is difficult to revive a company with "Creditor in possession" approach, debtor involvement into decision making and executive role is desirable.

Information utilities- The Code provides for the creation of multiple Information Utilities. It doesn't specify the modalities of formation of IUs in detail. It is to be seen how will the existing database like Central Registry of Securitisation Asset Reconstruction and Security Interest of India ("CERSAI"), Central Repository of Information on Large Credits ("CRILC"), MCA records, and other financial depositories be integrated into the IUs. The confidentiality of data is another area of concern.

Revival/resolution plan- The Code does not discuss the manifestation of revival plans, and it is to be seen whether this would be regulated by the Board/adjudicating authority

or remain unregulated like bilateral arrangement between the debtor and creditors.

Quality of Insolvency professionals

It will take time to train & develop high quality insolvency professionals. While there is no dearth of good professionals in the country but given that Insolvency is an extremely specialised and complex job, it would require highly trained professionals with adequate relevant work exposures in dealing with distressed businesses. The licensing has to be very strict and at the same time the practice be made competitive and rewarding to attract best minds in the country. There are only a handful of Restructuring and insolvency professional in the country as of now. The Board would have to take their experiences into account while framing the rules and responsibilities of the proposed insolvency professionals. High quality Insolvency professionals would be the single most important factor in resolution and revival of the insolvent business.

Timeliness of resolution While it is commendable that the code aims to fast track the resolution process, but certain cases may be too difficult to be decided within the period of 180 + 90 days, and possibly certain entities may be too large and valuable for the society to be allowed to wind down. Recovery may take precedence over Revival if complex resolution cannot be agreed within the specified time, as the consensus building exercise would be challenging.

Judicial capacity building Massive capacity building measures are required to upgrade the existing judicial infrastructure in order to deal with the plethora of new cases that shall crop up once the Code is notified. NCLT is still in the formation stage, and DRTs are already too overburdened and too few in number.

Final comment

The passing of IBC marks the coming of age of the Indian corporate legislation landscape. It is a giant leap of corporate reforms as it shall result in preservation of economic value; faster resolution of insolvency; strengthening of the credit and bond market; new investments; accountability of delinquent corporates; empowerment of lenders; clean-up of erstwhile bad investments; safeguard of institutional capital; protection of employees; promotion of new industry of information utilities; and development of new

set of insolvency professionals. The Government has shown great alacrity in framing and passing the Code since announcement in 2014-15 budget speech. Hopefully the implementation is done with equal vigour, conviction and speed. India has a chequered history of great legislation and poor implementation. This is one law where we cannot afford to muddle the implementation. It may not solve the NPA crisis immediately, but it's a step in right direction. The infrastructure proposed in the code might take some years to be established, and it has to be built brick by brick but as early as possible. The code will fail if any one of the four pillars mentioned earlier is weakened. However this would require collective and concerted efforts from government, regulators, judiciary, professionals, lenders and corporates. We hope with IBC in place Bankruptcy shall remain no more a stigma, and failure be given another chance! ■

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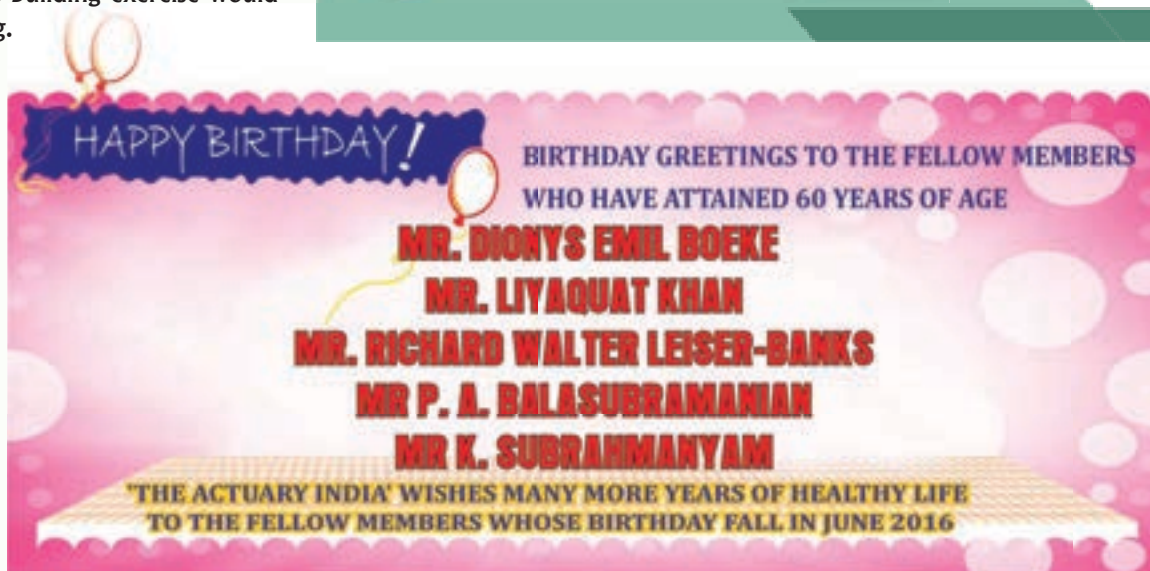
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Impact of Recent Losses, Events and Market Dynamics on Aviation Insurance – Part I

FEATURE

Introduction

Airline industry is seeing an increase in claims for last few years despite improvements in safety measures and great technological advancements. Particularly 2014 has been one of the worst years in terms of both large property damages and human loss since 2001. This is impacting aviation industry and putting pressure on Insurance professionals including actuaries and underwriters to find a way to balance premiums and claims in a manner to meet big catastrophic events airlines industry is exposed to.

To understand the market movements in entirety enabling comprehensive assessment of risk, one needs to understand (1) Available products and type of policies including change in type of policies, and/or in the terms and conditions (2) Perils, recent events affecting the nature of perils, (3) Major markets and players and business cycle (4) Availability of reinsurance (5) Support from Governments, Regulators and Industry as a whole.

In this article, our attempt is to touch some of these aspects and let the conversant readers stir the discussion and research leading to healthier, more potent and sustainable aviation insurance industry.

Aviation Risk, Perils and Products on offer

Airlines, Aircraft product liability, General aviation and Space are four major sectors of aviation insurance;. These sectors are further broken into different classes based on the end user or coverage as: 1. Aerospace,

2. Airbus Suppliers, 3. Airlines, 4. Airports, 5. Airside Insurance, 6. Air Traffic Control Liability, 7. Aviation Products, 8. Contracts & Leasing, 9. General Aviation, 10. Helicopter Operations - corporate, commercial, utility or public service environment, 11. In Space, 12. Maintenance, Repair and Overhaul Liability, 13. Personal Accident LOL, 14. Refuelling and Oil Companies Liability

Though innovative and combination of coverage are also being sold in market as a differentiator, traditional aviation insurance covers are mainly categorised as:

Ground risk hull insurance not in motion

- Covers the insured aircraft against damage when it is on the ground and not in motion
- Protection for the aircraft for events such as fire, theft, vandalism, flood, mudslides, animal damage, wind or hailstorms, hangar collapse, uninsured vehicles or aircraft striking the aircraft

Ground risk hull insurance in motion (taxiing)

- Similar to ground risk hull insurance not in motion, but provides coverage while the aircraft is taxiing, but not while taking off or landing. Coverage ceases at the start of the take-off roll and is in force only once the aircraft has completed its subsequent landing.
- Has been discontinued by many Insurer due to disputes between aircraft owners and Insurer about whether the accident aircraft was taxiing or attempting to take-off!

Third party liability insurance

- Covers aircraft owners for damage that their aircraft does to third party property, such as houses, cars, crops, airport facilities and other aircraft struck in a collision.
- Does not provide coverage for damage to the insured aircraft itself or coverage for passengers injured on the insured aircraft. Public liability insurance is mandatory in most countries.

Passenger liability insurance

- Many times this coverage is mandated for certain types of pilots and planes
- Insures passengers riding in the plane while the policy holder is operating it
- Provides monetary compensation for injuries and final expenses in the event of a fatality

Combined Single Limit (CSL)

- CSL combines public liability and passenger liability coverage into a single coverage with a single overall limit per accident
- Provides more flexibility in paying claims for liability, especially if passengers are injured, but little damage is done to third party property on the ground.

In-flight insurance

- Protects an insured aircraft against damage during all phases of flight and ground operation, including while parked or stored
- More expensive than not-in-motion coverage, since most aircraft are damaged in motion.

Covers are also available for the manufacturers or distributors of aviation products including: (1) Airframes (2) Air navigation or Airport ground equipment (3) Engine or any other major components (4) Ancillary equipment or any Sub-components

Key features/Unique characteristic of aviation insurance are:

1. Small market compared to other general insurance classes
2. Aviation policies are broad - can cover war perils, may not have any exclusions for flood or earthquake. Policies are considered "All Risk" and it truly provides coverage on an all risk basis.
3. The risks to be insured are limited. But, highly exposed to catastrophic events, may result in large property damages and fatalities.
4. Aircraft liability limits are usually placed on an occurrence basis.
5. Very large liability limits are readily available.
6. Usually an aggregate limit is not applied with the exception of product liability and personal injury liability.
7. Hull coverage is placed on an "Agreed Value" basis. The amount stated as the agreed value at the time of policy issuance is the amount paid in the event of a total loss.
8. Many instances are there where a claim has not appeared until years after an accident, till investigators found and agreed into the cause.
9. Relatively minor fault can cause a catastrophic disaster, incurring unforeseen legal liabilities and costs. In past, faulty rubber diaphragm in a fuel pump, faulty rudder actuator and a faulty wiring near a fuel tank has caused total loss of a light aircraft, a B737, and a B747 respectively.

10. Loss payment are usually not reduced by depreciation.

Major markets, their growth and dynamics

Market size - In terms of written premium within the world of aviation insurance, the airline insurance classes total up to approximately \$1.3 billion, Aircraft product liability makes up approximately \$925 million, general aviation contributes another approximately \$1.3 billion and the space sector generates rest approximately \$800 million.

In terms of geography - The aviation insurance market is divided in US and non-US market. US airlines risks are mainly covered by US based insurance companies. London and other international insurers can only take a share of these risks, not own the risk majorly. Some of the aviation insurers in US are USAIG, Global, and AIG.

Though the aviation Industry is rapidly growing in developing economies across the globe (e.g. China, India, and Middle East) still, the United States has by far the largest percentage of the world's general aviation fleet. As per GAMA (General Aviation Manufacturers Association) 2014 report, out of approx. 362,000 general aviation aircraft worldwide, 199,000 (or roughly 55%) are based in the United States.

The key Non-US market in aviation insurance is the London insurance market made up of the Lloyd's of London syndicates and Insurance companies in and around the city of London. Leading writers of airline insurance business include companies as Global, AIG, Allianz and Lloyd's Syndicates, ACE, Amlin and Wellington. After London, Paris is also a major aviation insurance market with La Reunion Aérienne leading an increasing number of international airlines.

In today's aviation market, there are about twelve major players:

1. AIG Aviation
2. Allianz Aviation
3. Berkley Aviation

4. Global Aerospace
5. Houston Aviation Company
6. Starr Aviation
7. Lloyd's of London and European Underwriters
8. Phoenix Aviation
9. International Aerospace Insurance Services
10. United States Aviation Underwriters
11. W. Brown & Associated
12. XL Aerospace

AIG Aviation, Allianz Aviation, Global Aerospace, Starr Aviation and United States Aviation Underwriters are the only ones capable to provide liability limits in excess of \$300 million.

An explosion of growth in aviation insurance underwriters brought new entrants to the market over the last 4-5 years. International Aerospace Insurance Services, Berkley Aviation, Allianz Aviation (US), Starr Aviation and an expansion of Lloyds are some of the newer players.

What drove this growth? Various factors drove the growth in aviation insurance. Massive increases in capital to insurance markets and huge increases in rates and premiums following the World Trade Center attacks of September 11, 2001 and historic safe run by the airline industry (most notably the U.S. airline industry) were major factors. In addition, competitive reinsurance became more available and major insurers began to see that aviation risks had significant growth opportunity.

Although the events of Sep. 11, 2001, brought great market growth and opportunity, it also impacted the aviation insurance market in many other ways. It is estimated that losses to the insurance industry including business interruption will be \$40 billion. About \$400 million in hull losses for the four airline aircraft was paid. These unprecedented losses caused insurers to seek ways to ensure their survival.

Underwriters invoked war risk cancellation provisions, massive rate

and premium increases followed, hull war rates increased by 1000% or more, third party war risk liability limited to \$50 million annual aggregate and insurer capacity became very tight. Even the government stepped in with the Air Transportation Safety System Stabilization Act and Terrorism Risk Insurance Act of 2002, and the FAA began providing war risk insurance for the U.S. airline industry at a fraction of the cost of the commercial marketplace.

Regulation & Government Actions

As the loss may occur in a geography other than domicile, Regulation and Tax implication with respect to (1) Cover provided (2) Jurisdiction in which the aircraft is registered (3) Physical location of the property or aircraft (4) Location of the insured's residence or business establishment, sometimes becomes critical while assuming risks as well as while estimating claim liabilities.

While standard worldwide insurance will cover most business aircraft operators in most parts of the world, there are regions and countries that mandate specific additional insurance requirements. Without this specific coverage, landing permits may be denied, and operations will be delayed. Country specific requirements often differ in terms of

- minimum liability coverage for aircraft, passengers, and baggage (e.g. European Union)
- currency(s) that coverage must be denoted in – USD, Euros, or Special Drawing Rights (SDRs)
- In format (Italy, Honkong)
- in Language (Mexico – must be in Spanish)
- in types of flight (specific insurance requirements for charter/non-scheduled commercial operators Germany, In Hong Kong - specific insurance requirements exist for both private non-revenue and charter operations)

- in Specifics. Like, Policies must indicate the currency unit, Specific operator name along with verbiage including coverage for 3rd-party liability, war risk, and allied perils. E.g. for operations in Germany the country name 'Germany' must be specified, In Hong Kong insurance requirements stipulate coverage limits based on MTOW i.e. Maximum Take-off Weight etc.

Government support to Aviation Industry or to ensure availability of Insurance also wields sizeable impact. For example, up until 2014, most U.S. airlines purchased the FAA (Federal Aviation Administration) coverage. 2014 onwards, movement away from government insurance has occurred against a backdrop of increased private

insurance capacity and lower prices. Recent series of large aircraft losses (MH370, MH17, attack on aircrafts on the ground in Pakistan and Libya) however, may lead to higher rates. It is unclear how much rates may increase and whether higher premiums might lead the airlines to again seek coverage from FAA, if such coverage remains available after FY2018 (Program authority for the provision of premium insurance expired on December 15, 2014. Authority to provide insurance under chapter 443 section 44305 at no premium expires on December 31, 2018).

End of part 1. Second part to cover Trends and major losses in recent years, Challenges in industry/ impact/ areas of concern and Conclusion: will be published in July Issue of Actuary India

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PERSONAL

Q What qualifications and experience do you think is appropriate for a CEO of a Life Insurance Company to be successful?

I feel that as such there is no specific qualification required for the CEO, other than normal PG degree which is relevant for other senior positions in a Company. However, what is really required in terms of experience is ability to think forward, ability to connect with people and passion to drive performance.

Q What are the key qualities one should possess to be a successful CEO. What are the challenges that you faced on the route to becoming a CEO?

As I have mentioned above, the top most qualities are that the person should be enterprising, living up to values and should be role model for people to follow. There were no challenges which I faced on the route to becoming the CEO, but I feel that it was honesty, hard work and dedication which helped me to reach this position.

Q What are your- hobbies and how do you manage your work life balance?

My hobbies are to track financial markets, reading business journals and travel with family. In spirit of being honest, I am not able to manage work life balance in the last few years. The business pressures in today's competitive world are such that I end up spending lot of time to work.

PROFESSION

Q What is your typical day at work?

I am an early riser and start my day with some morning walk, looking at mails before reaching office, spend about 10 hours in office, meeting team members, participating in business discussions, etc. I also make a point to speak to people cutting across hierarchy, which provides me valuable inputs from the field, knowing about areas of improvement.

Q What can you tell us about the future employment outlook in insurance sector for actuaries?

I am not an Actuary but I have great respect for this profession. The demand for actuaries will always remain in the industry. I think future is very bright, as insurance companies are set to grow in India (current penetration being very low), demand for structured and guaranteed products which will require actuarial expertise. Further, employment opportunities are increasing with certain knowledge based actuarial Center of Excellence (COE) being set up in India. I have also seen actuaries from India doing exceptionally well overseas, working with MNCs.

Q What do you consider to be the key areas where actuaries add value to the business?

I cannot think of any area in an insurance companies where actuary does not contribute - right from asset-liability management, product pricing, business profitability, capital

efficiency initiatives, expense management, etc. Not only this actuaries now work very closely with Sales, Product development, Underwriting, Finance and Operations to bring efficiencies and providing business ideas. If I have to summarise an Actuary is a catalyst for business and also risk manager giving early indications on business outlook.

Q What impact do actuaries have on consumers and society? What should they do to connect with the society?

Actuaries have an important role and obligation towards consumers in terms of providing products which are aligned to their needs and competitively priced. Actuary has to ensure that the product is real 'Value for Money' for the customer and that the terms are clear and fair to the customer.

Q How do you think Institute of Actuaries of India can support better its members?

As mentioned earlier, Actuaries play a key role across all aspects of the insurance business. They ensure that the business and strategic decisions are sound from the perspective of all stakeholders both in the short and the long term. The Institute can help its members by further strengthening their ability to contribute both in the core technical areas as well as applying the technical expertise in wider strategic/business areas. This can be achieved by way of providing guidance, training and sharing both the domestic and global best practices.

Q You being a fellow member of ICAI and ICSI, what do you see commonality of approach with Actuarial profession?

The commonality between actuarial profession and chartered accountancy is that both the professions require excellent analytical skills and ability to understand the business performance. Both are very respected professions, with Finance and Actuarial having huge dependence on each other in efficient working of an insurance company.

Q How do you see actuaries taking Business roles in Life insurance companies? What values can they add to the business in the area of Finance, Sales, Marketing and Risk management?

Actuaries have excellent ability to understand the business nuances and key parameters. They can be successful in business roles as well, but so far I have seen them focusing on their profession. There are huge linkages between Finance, Risk Management and Actuarial, therefore I feel that Actuaries can do really well in these areas.

INSURANCE INDUSTRY IN INDIA

Q What trends do you see for this industry in the next 3 to 5 years?

In last decade and half, Insurance sector has seen a steady growth in the premium income. The Industry has been through some rough patches in recent time and saw a decline in growth in 2013-14 and 2014-15, however there are some green shoots and going by the industry data for FY 15-16, there is visible growth. With the advent of over-the-counter (OTC) products, I envisage a deeper penetration into the rural belt, which would act as a catalyst in next 3-5 years for the next phase of Insurance sector's growth.

Are there things that the IRDAI or the Government should have or should not have done to assist the industry?

The regulator has been very active and we have seen a lot of changes happening in the regulatory landscape. The regulations has evolved over last 8-10 years and going forward I believe, we would witness lesser number of changes. IRDAI has been engaging with the industry players for inputs on key regulatory changes.

The central government in order to cover a larger population under insurance had launched the two insurance schemes – 'Pradhan Mantri Jeevan Jyoti Bima Yagna' (PMJJBY) and 'Pradhan Mantri Suraksha Bima Yagna' (PMSBJ). These have been a massive success and it has brought crores of people under the Insurance cover. This has helped create awareness about insurance across the length and breadth of the country.

Q What market share do you see the private sector players having in ten years time?

The private players have made a steady growth and currently all the players put together are almost at par with LIC in terms of new business APE. I believe for the next few years the share of private players will continue to rise and it will be difficult to put a number right now.

Q What are the top three issues facing the Insurance sector in India.

Persistency is one of the biggest issues faced by the industry. While there is lot of effort going into educating the customers on the long term benefits of an Insurance policy, the customer behavior is unpredictable and impulsive.

Low awareness of insurance products is another issue facing the industry. We also need some advocacy on insurance products, as this is the only long term social security tool available to society at large.

Long term profitability is going to be another challenge. As the margins are going down, the capital investment required to increase penetration is going to be a challenge.

Q What do you believe are the inefficiencies in the insurance industry? How do you think such inefficiencies can be overcome?

One of the basic inefficiency within the financial services industry put together is the standard KYC. Similar to a standard KYC followed within the Mutual fund space, it is important to have a standard KYC across all financial services. This will help cut down on time to issuance and also the costs. Even the Finance Minister has shown inclination towards a common KYC. We are hopeful that some quick progress is made in this regards.

Q What do you think are the strengths of Indian Insurance Industry?

The key strength of insurance industry is its size and reach. The insurance industry is a very strong pillar for the economy. Other than providing financial protection to people, it also benefits the economy by providing long term money through investments in Equity and debt markets. Further, it also helps lakhs of people to be self-employed as an agent.

Q How do you keep abreast with latest happenings in insurance sector in India and across globe particularly Life Insurance and overall economy?

In the current scenario it is not only important to know what is happening within the insurance industry but also equally important to know what is emerging in other industry like online space, emerging (disruptive) technologies, inventions in medical science, data analytics, etc. which can entirely change the way business is done. It is important to adapt and adopt newer technologies to help sustain and grow the business.

Reading and interaction with peers (locally and globally) is the best means to keep oneself updated on the latest happening. ■



Mr. Clifford Friend

Director of Education, Institute & Faculty of Actuaries (IFoA)



“

Mr. Clifford recently joined the Institute and Faculty of Actuaries as its new Director of Education. This followed a distinguished career in Higher Education culminating as Professor and Acting Vice-Chancellor of the UK's most business engaged university. He is a professional engineer by original training with a first class honours Bachelors degree and PhD from the University of Surrey, and is an alumnus of INSEAD, the French international business school. Clifford is a Chartered Engineer, Fellow of the Institute of Directors and an elected Council member of the CBI - the UK Confederation of British Industries.

”

Q As a Director of Education, what are the key focus areas for you?

My key focus areas are:

- Visibility for the profession – As part of the senior management, my key role is to increase the visibility of the profession by showcasing the skills that actuarial profession can bring to other enterprises.
- Education – Maintaining the high quality of education so that the profession continues to maintain its gold standard. We are looking to bring in courses that will help students/fellows develop different dimensions/skills to adapt and contribute in today's changing environment.
- Implementation of Strategy – We are in the process of reviewing the education strategy and one of the key tasks would be stage by stage implementation of the said strategy by setting small but achievable goals.

Q What has attracted you to IFoA given that you have been an Acting Vice Chancellor of a university

If you see, it is not a big change as I am still part of an education system. I feel that IFoA as an organisation is evolving and I can bring in my experience to

help build robust processes and implement best practices to help develop the profession. I empathise with the public benefit of this profession. The volunteer community of IFoA is a close knit unit and works very hard towards building a profession which has significant public interest. I am very excited and committed to be part of this journey.

Q With such a dynamic environment and advancement in technology, what role do you see an actuary will play in the future?

Yes the environment is changing and so we need to adapt to the change. As I said earlier, as part of the senior management, one of the key tasks is to evaluate the traditional skill sets of an actuary and also understand the new skill sets that are required and then work towards breaking the stereotype. Chartered Enterprise Risk Actuary (CERA) is one of the examples where profession helps its member to enhance their skill set. We will continue to develop and offer such courses. Another important aspect is visibility of the profession. It is the key. It is important for actuaries and also for the profession to promote and present their skills to different people. Actuaries are highly talented people with a skill

set which has a varied application. I see actuaries continue making significant contribution to their organization.

Q You talked about IFoA doing its bit to enhance the opportunities available to the students but how to you deal with the challenge of also making the students open to new and non traditional areas of work.

One of the big challenge that we face is that students/fellow members are not open to explore opportunities outside the traditional actuarial domain. It is one challenge that we are actively working on by providing them with information and visibility of the various opportunities outside the traditional domain of actuaries where they can contribute and which aligns with their skill set. We also aim to offer various courses (e.g. CERA) which help an actuary to broaden his/her skill set and thereby help them venture into different fields like risk management and investments thereby broadening their horizon.

Q What are the skills that an Actuary needs to develop and skills that also sets them apart. You have been an MBA and an engineer. Your thoughts.

What sets them apart is their intelligence, analytical skills and their ability to have a long term

view and a good understanding of the long term impacts on a business which, not many other professionals have. Derek Cribb spoke about these qualities in his talk with students of a business management institute in Pune. What they lack is communication skills while dealing with layman. Besides the strong technical skills, they also need to develop softer skills (like managerial skills). It is important to have a balance between technical and broader skills so as to achieve a rich and successful career.

Q Do you have plans to set up liaison with Indian universities for a course in Actuarial science which will lead to some exemptions?

Before we accredit any universities, we look at their curriculum to ensure that it covers the basic education which is essential to be an actuary. Another key criterion is the innovation that these universities bring to their curriculum. These universities are not expected to blindly follow IFoA but to partner

it in developing the profession. Till date we have provided accreditation to only a small number of universities which have satisfied our criteria. We are happy to explore such opportunity with Indian universities in the future. ■



TOPPERS INTERVIEW



Ms. Neha Podar
CA3 Topper, March 2016

Congratulations

1. Congratulations! Ms. Neha Podar, for being topper in CA3 exam held in march 2016. Tell us about yourself, your educational background and your hobbies.

Thank you! Currently, I am working with HDFC Ergo General Insurance and have 4.5 Years of total actuarial experience in General (and especially Health) insurance. Academically, I have a double graduation degree, one in Commerce (from Mumbai University) and parallelly another one in actuarial science (from D.S. Acted). In my free time, I like to cook or read fiction novels.

2. How did your parents, family and friends contribute to your success?

Immensely! Their support has allowed me to put in the hardwork that i did. My exam times have been challenging for them too. They have helped me practice presentations on a daily basis. It is more like a combined success for all of us together.

3. How many hours of study on average per day did you put in to top the CA3 result where in only 17 candidates passed out?

CA3 is a communication exam which requires some habits to be imbibed along with some specific exam type preparation. To master my skills for the latter, i spent an hour daily - recording my mock presentations, practising old exam papers, etc.

4. How much time do you think one requires for serious preparation for this examination?

It depends! As i said, not everything in this paper is to be "studied"; its more about the habit. So, if the communication skills of a candidate are good, a month's preparation would suffice; else even 3 months could be required to get into the habit.

5. Did you face any difficulty while studying this subject?

As actuarial students working in the professional environment for many years, some concepts are very intuitive to us. CA3 revolves around explaining basic technical jargon to a non-technical audience. Hence, initially changing my perspective to that of a non-technical audience was difficult; but practising with some non-actuarial friends helped.

6. CA3 is a three day exam where first two days are dedicated to workshop based training sessions taken by communication experts. What all exercises were included in the exam workshop? How they helped you prepare for the exam?

In the new format of the course, the training sessions have been replaced by a pre-course reading material. This is very well drafted and the intermittent exercises help you to improve various areas of your communication skills. Further, the exam counselling arranged by the institute was very helpful.

7. This communication based exam tests an individual's presentation and written skills. How this exam has professionally helped you in your day to day communication at work?

After CA3, i am much more capable and confident in communicating with other departments.

8. How do you think you can add value to the actuarial profession?

I wish to explore newer risk areas and increase the application of actuarial knowledge to different domains. Also, i wish to contribute towards the educational aspect of the profession to ensure more number of students enrol without comprising on the quality of professional services.

9. What was your purpose while selecting this course—communications?

This soft-skills' training is such that without it, doing complete justice on actuarial work is difficult. Also, CA3 was the last paper for me to attain my fellowship. ■

Advisory Group on General Insurance



The Advisory Group on General Insurance (AGGI) has been set up with objective of providing a forum for actuaries working in the General Insurance (GI) industry in India to address issues that directly affect their day-to-day functioning, as well as provide advice to the General Insurance Council on issues it deems appropriate. Additionally, the group also aim to provide relevant learning and training opportunities to young aspiring actuaries specialising in general insurance domain.

The changes in the Insurance Act allowing foreign reinsurers to establish their branch in India and the recent exposure draft reinsurance regulations from IRDAI provides new opportunities for both life and non-life actuaries. At the same time it is felt that non-life actuaries would need to broaden their skillsets beyond the traditional areas of reserving and product pricing. This is something that AGGI wants to address and improve over the next few years.

In December 2015, Advisory Group in General Insurance along with Advisory Group in Micro Insurance organized a Joint Capacity Building seminar in General Insurance and Micro Insurance in Mumbai. The joint seminar aimed

to explore topics, widely used across business and research areas, to cross-pollinate emerging ideas within the field of general insurance. The seminar covered in detail Exposure Based Pricing technique widely used in pricing Commercial risks. Mr. Manalur Sandilya introduced some of the Risk Transfer Tests an Appointed Actuary can undertake to ascertain if a particular reinsurance contract attempts to disguise self-financing (or borrowings) as a legitimate risk transfer for obtaining solvency relief or for smoothing the underwriting results.

Additionally, in June 2016 the advisory group organized a capacity building seminar on GLM pricing using freeware R. It covered both theoretical aspect of Generalized Linear Modeling as well as practical aspect on the usage of the software. The seminar was well attended with ~ 45 participants against the planned capacity of 30 participants and we had to disappoint few of our member colleagues due to shortage of availability. The actual hands on training was equally well received by the audience with strong and positive feedback about the seminar. Such feedback is very encouraging and the advisory group is looking at conducting such kind of hands on training seminar on regular basis.

The committee finalized the APS 33 - Peer Review for Non-Life Insurance companies taking into consideration the feedback received from the Advisory Group on Professional Affairs and Standards (AGPAS) and Fellow members. The APS would now be submitted to the council for its approval. The committee has made Peer Review applicable for March 2016 statutory valuation for non-life insurance companies.

Further, the working group responsible to draft the Guidance Note on reserving for non-life actuarial professionals working in the Indian Insurance industry has submitted its draft of guidance note and is expected to be finalised by March 2017.

On a longer term basis, the AGGI strives to work closely with the IRDAI, the General Insurance Council, GI actuaries and management of GI companies to enhance the actuarial contribution in the management of GI companies by providing support on robust reserving, pricing & capital modelling techniques, product innovation, compliance, and overall risk management. This will improve the profitability of the GI companies and help increase the penetration levels of the Industry. ■

“PEOPLE'S MOVE”



Ms. Parul Priyam has moved from Swiss Re Bangalore and joined Star Union Dai-ichi Life Insurance Private limited company. She worked in Swiss Re for 6 years and was heading Europe, Asia and South Africa valuation team. Before joining Swiss Re, she worked with HSBC in equity research for 4 years and Kotak Life Insurance in the area of "Group pricing" for 2 years. Parul has joined SUI Life as AVP- Head of Pricing and is based out of Mumbai. She is a qualified actuary from Institute of Actuary, UK.

Canada

The Supply and Demand of Actuarial Talent in North America



Greetings from Canada!

Last year the results from a study on the supply and demand of actuarial talent in North America were released. The study was conducted by The Economist Intelligence Unit and was jointly commissioned by the Canadian Institute of Actuaries, Society of Actuaries and Casualty Actuarial Society. Surveys were conducted from the perspective of employers of actuaries to understand the demand-side and from university educators to understand the supply-side.

The study provided interesting insight into the actuarial profession as summarized here.

- Since 2011, actuarial employment has grown 3% and the number of graduates from actuarial science university program has grown 8%.
- Actuarial demand varies by practice area with the top practice areas being Healthcare in the United States and Property and Casualty (General Insurance) in Canada.
- Growth in the Pension practice area lags given the shift away from defined benefit pension plans.
- The number of graduates seeking actuarial employment is expected to continue to exceed new actuarial employment.
 - o Entry-level candidates will face a highly competitive market.
 - o At the mid-career market, employers are expected to struggle to find qualified candidates to fill available roles.
- Predictive modelling and advanced analytics is a practice area of expected growth opportunity.
- Communication and managerial skills in actuaries appear to be a concern for employers.

This was the first time such a study was conducted and has set a benchmark for the analysis of supply and demand of the actuarial profession in North America. ■

About the author

Mr. Kedar Mulgund

Has 20 years of experience in Pricing, Product Development and Financial Reporting Spanning Canada and India



Kedar.Mulgund@sunlife.com



Actuary



Sun Life Financial in Toronto, Canada



EMPLOYMENT OPPORTUNITY

Senior Pricing Actuary

Reports to: Chief Actuary

Location: Dubai

RGA is one of the largest life reinsurance companies in the world, and the only global reinsurer to focus primarily on life and health-related reinsurance solutions. If you have a passion for service, finding innovative solutions and working in a dynamic environment, then RGA is for you.

An exciting position is available for an enthusiastic, self-motivated and experienced individual to take responsibility for the individual pricing function in RGA's Middle East operations. The role will involve pricing and all associated data and business analytics; periodic monitoring of experience; review of pricing basis; and collaborating with other functions to assist in meeting RGA's business objectives.

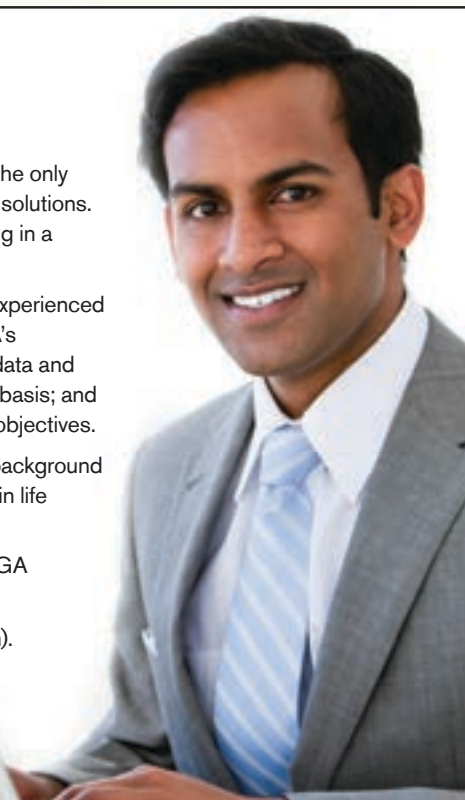
We are looking for an experienced and qualified actuary with a strong background in life insurance pricing and excellent communication skills. Experience in life reinsurance pricing is an advantage.

To be considered for this position, apply via the Careers page on the RGA website (www.rgare.com) by 30 June, 2016.

For more information, please contact Bongsi Motse (bmotse@rgare.com).

RGA

www.rgare.com



Mind Exercise



Puzzle No 247:

Identify the three magic numbers satisfying the given conditions.

First Number:

- If it was a multiple of 2, then it was a number from 50 through 59
- If it was not a multiple of 3, then it was a number from 60 through 69
- If it was not a multiple of 4, then it was a number from 70 through 79

Second Number:

- If it was a multiple of 6, then it was a number from 40 through 49
- If it was not a multiple of 7, then it was a number from 60 through 69
- If it was not a multiple of 8, then it was a number from 80 through 89

Third Number:

- If it was a multiple of 3, then it was a number from 50 through 59
- If it was not a multiple of 4, then it was a number from 60 through 69
- If it was not a multiple of 6, then it was a number from 70 through 79

Puzzle No 248

Eight villages lie on a straight road. The distance between any pair of villages is different from the distance between any other pair of villages and is an exact number of km. Knowing the distance between two villages is thus sufficient for a local to identify which villages they are.

The distance between the two end villages is 34 km. What are the distances between adjacent villages?

Solutions to puzzles:

Puzzle No 245:

900 picknickers

Puzzle No 246:

The girls weights are: 56, 58, 60, 64 and 65.

Correct solutions were received from

Puzzle No 245:

- Prasham Rambhia
- Rashi Manek
- Mercy Amalraj
- Venkatesh Konar
- Ankit Chhajaj
- Monika Gupta
- Vivek Mantri
- Grham Lyons
- Kruti Malde

- Shilpi Jain
- Archana Murali
- Akash Jain
- Nirupam Raha
- Sahil Kataria
- Richaa Agarwal
- Puneet Dhiliwal
- U S S S Rout
- Dilip S Anand
- Vinod Shelar
- Iyyanar Selvam K
- Myank Patel
- M. Vaishno Devi
- Hemant Rupani
- Neeraj Devliyal
- Piyush Gupta
- Abhilekha Baid
- Abhishek Dudhwewala

Puzzle No 246:

- Prasham Rambhia
- Mercy Amalraj

- Venkatesh Konar
- Shilpi Jain
- Graham Lyons
- Kruti Malde
- Archana Murali
- Nirupam Raha
- Sahil Kataria
- Puneet Dhiliwal
- U S S S Rout
- Dilip S Anand
- M. Vaishno Devi
- Hemant Rupani
- Neeraj Devliyal
- Piyush Gupta
- Sampada Kelkar
- Abhilekha Baid
- Abhishek Dudhwewala

Ms. Shilpa Mainekar

shilpa_vm@hotmail.com



Upcoming
EVENTS

**12th Seminar on
Current Issues in Retirement Benefits (Pension)**

Date: 29th July, 2016

Venue: Hotel Sea Princess, Mumbai.

Participation Fees: Rs. 5000+15% Service Tax

Requirement for Actuarial Executive for implementation of Prophet Software in Life Insurance

Sahara India Life Insurance Company Ltd www.saharalife.com based out of Lucknow, UP, India, incorporated in the year 2004, has current vacant position of an Executive in the Actuarial Functions Department in its Head Office in Lucknow. The applicant should meet the following profile;

Functions: Prophet actuarial Software implementation and to be nodal point for the same within Actuarial Functions Department. However, in due course, the position holder will have opportunity to hold responsibility for other Actuarial Functions.

Reporting: Appointed Actuary

Requirement:

Actuarial Examinations: Minimum of CT series subjects (except CT 9) and desirable ST2.

The Examinations should have been passed or exempt from the Institute of Actuaries of India and/or Institute and Faculty of Actuaries, London.

Experience:

Minimum of five years of actuarial functions in a life insurance company or consulting firm out of which at least two years should have been on the Prophet Software working in life insurance actuarial functions.

Expected work Skills:

1. Knowledge of Indian Insurance regulations, particularly on the life insurance side.
2. Statutory reporting
3. Asset share and Embedded value calculations and other shareholder reporting
4. Experience analysis-Mortality, persistency, expenses.
5. Prophet new product set- Par, Non Par including unit linked
6. DCS software
7. Cash-flow modelling of Par, Non Par including unit linked products
8. Reinsurance structures and implications

Expected Software Skills:

MS Excel, MS Word, MS Power point, MS Access, Prophet including DCS

Salary Package: Market standards

Selection: Interview by the Selection Committee.

Confidentiality: The applications will be treated with required confidentiality and discretion and should be send by email only to hrd.silicl@sahara.in

URN: Saharalife/2016-1702



Sahara India Life Insurance Co. Ltd.

Please write to us or contact us at:

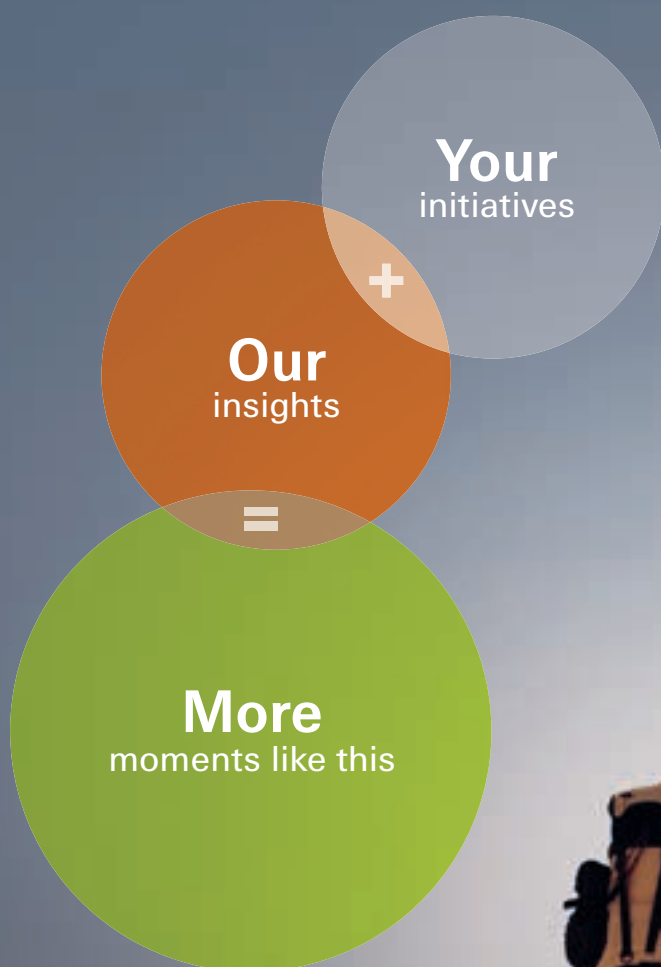
Sahara India Center, 2, Kapoorthala Complex, Aliganj, Lucknow - 226024

E-mail:- hrd.silicl@sahara.in

Tel.: 0522-2337777, Ext. - 5098

Corporate Identity No. U65999UP2000PLC025635

IRDA of India Registration No. : 127



With a mortality protection gap of a staggering US\$ 58 trillion in Asia Pacific and a shortfall in healthcare funding forecast to reach nearly US\$ 200 billion by the end of this decade, talk about mountains to climb! With more than 100 years' experience working together with insurers in Asia, Swiss Re understands the benefits of pooling our resources. By combining our extensive insights into ageing Asian communities with our global capabilities in analytics and risk management expertise, we can help grow your business, protect more customers and close Asia's protection gap. Let's set our sights on the summit. **We're smarter together.**

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