



Institute of Actuaries of India

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THE MAGAZINE OF THE INSTITUTE OF ACTUARIES OF INDIA

September 2018 Issue

Vol. X - Issue 09

Pages 56 • ₹ 20

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

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

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Printed and Published monthly by Vinod Kumar Kuttierath, Head of the Education and Training, Institute of Actuaries of India at PRINT VISION, 75/77, 1st floor, Punjani Ind. Estate, Near Abhishek Hotel, Khopat, Thane (W) 400 601, for Institute of Actuaries of India L & T Seawoods Ltd., Plot No. R-1, Tower II, Wing F, Level 2, Unit 206, Sector 40, Seawoods Railway Station, Navi Mumbai 400 706
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5th Seminar on Current Issues in General Insurance

Organized By: Advisory group on General Insurance, IAI
Venue: The Pllazio Hotel, Gurugram **Date:** 26th & 27th July 2018

DAY 1

WELCOME & INAUGURAL ADDRESS



The seminar began with an address by **Mr. Biresh Giri**, Chairperson of Advisory Group on General Insurance, who welcomed the attendees of the 5th Seminar on Current Issues in General Insurance. He noted the high attendance for the seminar with a good blend of in terms of seniority of actuaries attending the seminar.



Mr. R Arunachalam, Vice President, IAI, welcomed everyone to the 5th Seminar on Current Issues in General Insurance. He thanked Mr. Biresh Giri for his role in organizing the seminar and liaising with the different speakers to come and share their knowledge. He expressed his hope for some interesting and informative discussions over the next two days.

Session : CEOs Panel Discussion: Road Ahead for General Insurance Industry

Moderator: Mr. Biresh Giri

Panelist: Mr. Neelesh Garg, Mr. KG Krishnamoorthy Rao, Mr. Varun Dua

Mr. KG Krishnamoorthy noted the high premium growth achieved by the General Insurance Industry in the past and his expectation of continued double digit growth in the medium term.

Changes in the Motor Insurance environment were discussed with the introduction of mandatory 3 year and

5 year motor insurance policies as per the order from honourable Supreme Court of India. **Mr. Neelesh Garg** reflected on the recent changes in the TP policy premiums and their impact on the industry. The upcoming Motor Vehicles Bill



was also discussed with its impact on claims and premiums.

Mr. Varun Dua mentioned the need for us to become more innovative as an industry. Emergence of new age Insurance companies like Godigit and Acko has led to a disruption in the market with introduction of automated claims settlement and small ticket size policies like ₹1 ride insurance with Ola and Uber. Technology driven innovation like telematics, insure-tech and use of artificial intelligence in Insurance industry was discussed.

Recent Government initiatives like Ayushman Bharat to provide health insurance to 10 crore poor families and Pradhan Mantri Fasal Bima Yojana to increase adoption of crop insurance in India were also discussed.

Session : Expense of Management - The Journey so Far (Part 1)

Presenters: Mr. Rajesh Dalmia, Ms. Tanmeet Kaur



The presenters introduced the EOM regulations, 2016 and contrasted the regulations against the earlier Section 17E of Insurance Rules, 1939. The presenters noted the current framework to be more liberal as compared to the earlier framework. Some hypothetical examples of gaps in compliance under the earlier and the new regime were presented.

The presenters noted the challenges regarding the interpretation of new regulations, particularly for allocation of administration expenses across different LoBs. The conflict between the new regulations and the regulations on preparation of financial statements was also noted.

Concerns were expressed regarding these regulations influencing the business written and the expense allocation methodologies towards compliance with the regulations. Also, concerns were raised regarding the regulations potentially promoting the use of TPA administrators.

Session : Cyber Risks and Insurance Solutions

Presenter: Mr. Shashank Bajpai



Mr. Bajpai highlighted the fact that cyber threats can be local as well as international and India is among the top targets for international cyber-attacks. He also explained that the cyber risks can be both natural as well as man-made with the latter being driven by individuals or even the state.

It was noted that cyber risk management today focuses on risk mitigation rather than risk transfer and cyber insurance market is currently very small. The problems regarding lack of data, accumulation risk, potential moral hazard etc. were discussed as challenges to provide cyber insurance.

Some ideas to prevent cyber risk like developing standards, tracking technological development, increasing resilience of IT etc. were discussed.

Session : Role of GI Council in Shaping up the Best Practices and Market Conduct in the Industry

Presenter: Mr. R Chandrasekaran



Mr. R Chandrasekaran started by introducing the constitution and composition of the General Insurance

Council and its role under the Insurance Act. He introduced the various sub-committees and working groups under the council. The following initiatives by the council were discussed:

- ♦ Platform to check duplication of claims under PMSBY
- ♦ Online MIS for insurers
- ♦ Fraud Risk Mitigation Portal
- ♦ Policy verification platforms for Schengen Visa Authority and TN and Goa Polica
- ♦ Office Locator and standardisation of IDV of Vehicles for public
- ♦ Vahan Database to identify uninsured vehicles
- ♦ Capping of distribution fees to Motor insurance Service providers and formulation of a watchdog committee
- ♦ Electronic Transaction Administration and Settlement System for dispute redressal in co-insurance
- ♦ Standardisation of data systems and policy wordings

Session : Expense of Management - The Journey so Far (Part 2)

Presenter: Mr. Ritesh Jiwarajka



The session started with the discussion on current GI Industry position and various regulations applicable on them. Under the EoM regulations, various segments to be considered for calculations and compliance were discussed.

The requirement to have a well-documented policy for expense allocation among segments which has been reviewed by the board was highlighted. This policy needs to be reviewed annually and disclosed in Annual Report.

The recent NIC and Expense ratios of different companies were discussed and the Annual EoM return

requirements were presented. The session concluded with discussion on actions in case of non-compliance with the regulations, both on an aggregate as well as a segment level basis.

Session : Recent Developments in General Insurance Industry in India and Globally

Presenter: Mr. Hitesh Kotak



Mr. Kotak presented the recent trends in Global General Insurance Industry like the weather events in 2017 including hurricanes Harvey, Irma and Maria and their impact on the underwriting performance of different insurers.

The introduction of risk based capital regime and the mandatory peer review requirement of Actuarial reports was discussed.

He also discussed the increased adoption of technology by different sectors like car-to-go or drove now initiatives by BMW and Mercedes which allow a pay-per-use feature instead of owning cars and their impact on the insurance industry. The advent of 3D printed automobiles and parts and its impact on the repair costs and Insurance policies was discussed.

Vote of Thanks and Felicitation

The proceedings for the day were brought to a close with a Vote of Thanks by **Mr. Puneet Sudan**, Secretary of Advisory Group on General Insurance.

DAY 2

WELCOME & KEYNOTE ADDRESS

The second day of the seminar began with **Mr. Biresh Giri's** opening remarks.

Ms. Pournima Gupte, member (Actuary), IRDAI gave the Keynote address. She highlighted various regulations for the General Insurance industry like the requirement of minimum 7 years of relevant work experience for an Appointed Actuary, peer review of actuarial valuation reports of Appointed Actuaries and pre-approval of Motor and Health policy prices. She noted the requirements for General Insurance industry to be liberal as compared to Life Insurers. She also highlighted various new regulations brought in by the regulator like IFR17, Risk Based Capital etc. and expressed willingness to get the Industry's and Actuarial community's view on these over the course of the day.

Session : IFRS 17: Implications for General Insurance Companies

Presenter: Mr. Alasdair R Smith



Mr. Alasdair started with the implementation schedule for IFRS 17. He introduced the three measurement models (BBA, PAA and Variable Fee Approach) under IFRS 17 and contrasted the BBA and PAA models and their requirements.

The eligibility criteria for the PAA Approach and the recognition of various items in P&L under PAA and BBA was discussed. The concept of level of aggregation and contract boundaries were introduced.

Format of financial statements under IFRS 17 were displayed and the approaches for first time implementation of IFRS 17 were discussed. The session

ended with a discussion on IT and data system implications of IFRS 17.

Session : Recent trends in Natural Catastrophes and Their Implications

Presenter: Mr. Amitabha Ray



Mr. Ray started with the data on Global Insured and Uninsured Catastrophic losses over the last few decades and the increasing trend in the quantum of these losses. He emphasized on losses due to hurricanes which formulate major part of these losses and how they have a tendency to come in clusters rather than being random.

Some recent catastrophic events like earthquakes (Chile, Christchurch, Tohoku) and weather events (Thailand Flood, Cyclone Yasi, Hurricane Sandy and Typhoon Haiyan) were discussed. The fact that most of these events had an impact much greater than anticipated by any model was emphasized.

The session concluded with discussion on challenges to get relevant exposure data for modelling and key things to keep in mind while modelling catastrophic claims.

Session : Claims Process Automation - Challenges and Opportunities

Presenter: Mr. Amitabh Jain



The session started with a video on how technology can

transform claims processing by Insurance companies. Use of Chat-bots and NLP for claims processing by companies like Lemonade Insurance and their impact on claims handling costs and claim settlement times were noted.

Mr. Jain introduced some recent initiatives like use of blockchain technology for automated compensation in travel insurance policies (like Fizzy by AXA) and InstaSpect by ICICI Lombard General Insurance. Mr. Jain explained how InstaSpect allowed claims intimation and damage assessment over live video feed which also helped to bring claims handling costs, especially in remote areas. Recent Digitization initiatives for OPD claims were discussed which have significantly reduced the claim settlement time.

The session ended with discussion on some challenges like infrastructure availability, risks of fraud etc. and the future prospects of Blockchain, Chatbots and automated claims assessment.

Session : Insuretech - The Revolution in Insurance

Presenter: Mr. Safder Jaffer



Mr. Jaffer started with an introduction to Insuretech and its advantages. He emphasized on the fact that the Insurance industry has lagged behind in adoption of technology but is picking up driven by the new disruptor companies. Some important technologies under Insuretech like Blockchain, IoT, and Machine Learning etc. were discussed.

Mr. Jaffer discussed the issues in UAE Motor Insurance Industry and Telematics can help to influence driving behavior and reduce premiums while having a positive impact on entire industry. Further, Insuretech initiatives in Health Insurance including use of fitness bands, telemedicine, genomics etc. were discussed.

Scope of Insuretech in Agriculture Insurance including 3D imaging using drones and crop simulation modelling

was discussed. The session concluded with emphasis on the fact that Insuretech will focus on enabling Insurance value chains rather than replacing incumbent insurers and a reflection on issues to adoption of Insuretech by the traditional Insurers.

Session : Underwriting: Art of 100 years or New Age Science

Presenter: Mr. Sasi Kumar



Mr. Kumar started with the introduction of role of an underwriter in evaluating a risk and setting terms and conditions and prices of insurance policies. Various decisions made by an underwriter were introduced and a contrast was made on how they were earlier made using the professional judgement of the underwriter but are now increasingly being replaced by statistical analyses. Mr. Kumar noted the need for a blend between statistical analyses and use of underwriter's judgement, especially in absence of appropriate data.

Evolution of various technologies in Underwriting were noted. The final conclusion of the session was ***"Underwriting is both Art and Science, complemented by Discipline"***

Session : Motor TP Market Overview and Impacts of Recent Changes in Legislations

Presenter: Mr. Anurag Rastogi

Mr. Rastogi noted the fact that Motor premiums contributed c.50% to the overall General Insurance Premiums in India. He presented the number of accidents by state in 2016 to the audience to reflect on the frequency of claims. He presented a chart on reporting lag and settlement lag used in the industry. He highlighted the declining death and Injury cases per vehicle but the increasing number of deaths per accident which could be driven by faster cars and better roads leading to increase in accident severity.



Vote of Thanks



Supreme Court Judgements in cases of Sarla Verma and Pranay Sethi were discussed with their impact on the compensation in case of deaths. He noted the lag of 7-8 years for the Sarla Verma verdict to be fully adopted by the industry while the adoption of Pranay Sethi judgement has been much faster. The impact on claims and reserving were discussed.

The session ended with discussion on some other regulations like Section 163A of the Motor Vehicles Act, Mandatory Long Term Third Party Insurance and Motor vehicles Amendment Bill, 2017 and their impact on the Insurance Industry.

The seminar was concluded by a vote of thanks by **Mr. Puneet Sudan**, who thanked the participants, the senior actuaries and the organisers for a lively, insightful and meaningful seminar.

Written by



Mr. Piyush Jain

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“ Mr. Piyush Jain is currently working as a Senior Consultant with RSA Actuarial Services (I) Pvt. Ltd. ”

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6th Capacity building seminar in Health Care Insurance

Organized By: Advisory group on Health Care Insurance, IAI
Venue: The Pillazio Hotel, Gurugram **Date:** 2nd August 2018

WELCOME & INAUGURAL ADDRESS

The Seminar began with an inaugural address by **Mr. Vishwanath Mahendra**, Chairperson, HCI advisory group, IAI. He welcomed all the participants and speakers to the seminar and briefly touched upon the latest developments in the industry like IFRS 17, Risk based capital etc.

Session : Critical Illness Product Pricing - Consideration for deriving incidence rates

Speaker: Mr. Abhijit Pal



The objective of the session was to understand the calculation of Incidence Rates using Population data and Hospital data and also understand the peculiarities of the CI product design which affect their claim experience and hence the pricing. **Mr. Abhijit** began the session with an introduction to the CI cover, the benefits and the customer needs fulfilled by the cover. CI covers a number of conditions, with 75- 80% of the claims coming from 4 major conditions - Cancer, Heart attack, Stroke and Coronary Artery (Bypass) graft. The 2016 Health Regulations have provided standard definitions for 22 conditions. Mr. Abhijit then spoke about various product design considerations like the payouts on the policy whether they are accelerated benefits along with Term Insurance or as a standalone CI benefit, tiered benefits varying with the severity of the condition or Multi pay, waiting period, survival period, extent of underwriting ,

etc. as these will impact the pricing for the product. He also stressed upon the need to update the CI definitions periodically in line with the latest developments in the medical technology. He then moved on to explaining the calculation of Incidence rates with various data sources available like companies own data, population data, hospital discharge data and data from research institutions. He illustrated it with the help of an example for deriving incidence rates for Cancer using the Population based cancer registry data maintained by National Centre for Disease Informatics and Research which provides cancer incidence by age, gender and cancer sites (ICD 10 coded).He also spoke about the adjustments which needs to be made to the population cancer data to make it appropriate for insurer, like difference between definition of cancer between insurance company and the population data, level of underwriting , geographical spread , socio economic profile etc. The derived rates then need to be smoothen out using graduation techniques and a sense check is done to ensure the accuracy of rates. On the similar lines he explained the derivation of incidence rates for Heart attack using the hospital discharge data available in US.

Session : Pricing the additional procedure for the existing products

Speaker: Mr. Sumit Ramani



Mr. Ramani spoke about the pricing of additional treatment or procedure in the existing products. These procedures were earlier not covered under the policy

due to cost, availability or approval constraints. He began the session with a discussion on the reasons to include the procedure in the existing products which could be competitive pressures, USP, recent medical advancement, regulatory push etc. We also need to consider the key stakeholders, both internal and external. For the Premium calculation, we first need to consider the eligible population which needs to be considered for pricing purposes the steps for the same are as below

- ♦ filter out the population expected to get treatment from the given condition,
- ♦ from the selected lot we need to filter out people who will undertake the line of treatment under discussion
- ♦ this needs to be further filtered by any other criteria as specified by the policy conditions

For the eligible population we need to calculate the Frequency and severity estimates using the data from the available resources like own data, industry data, reinsurer's data, etc. Once we have the estimates, then we need to consider various risks impacting the future experience of the business we will write and steps to mitigate those risks. Mr. Ramani further explained the pricing steps with a case study to price inclusion of a new line of treatment for patients suffering from severe persistent Asthma.

Session : Health Savings Account - Global Practices and Learning for India

Speaker: Ms. Raunak Jha, Mr. Kartik Raja

Ms. Jha kick started the session with a discussion on current state of affairs in our country:

- ♦ 62% of our healthcare cost is borne by general public
- ♦ There is no state insurance
- ♦ Cost of private healthcare is also high due to high medical inflation
- ♦ Inadequate medical coverage - outpatient services are not covered

The current demographics of the country are such that people are more inclined towards savings products rather than protection and have high aversion to tax. There is also limited affordability due to high frauds and irrational utilization of services. Scope for existing coverage also needs to expand to cover emerging diseases. She also spoke about the policyholder's lower preferences for cost sharing, ease of purchase and maintenance and convenient claim process. She said that hence there is a need to have innovative products like Health Savings account. Ms. Jha was joined by Mr. Kartik Raja for a discussion on HSA plans.



Mr. Kartik began with an introduction to the plan, it's a combination of indemnity plus savings plan. He also spoke about the key attributes of the plan like account administration, fund contributions, fund usage, underlying insurance product and tax treatment of the contributions. Mr. Raja also shared some of the global examples and key learnings from them. This was followed by a discussion on the product design and considerations like purpose of fund restrictions on usage and bundling with other insurance products. The discussion concluded with a consideration of the products currently sold in India, their typical features, challenges and the possible solutions for them.

Session : Panel discussion of Standalone Health Insurance Appointed Actuaries on latest issues faced by Health Insurance Industry

Moderator: Ms. Raunak Jha

Panelist: Mr. Vishwanath Mahendra, Mr. Joydeep Saha, Mr. Irvinder Kohli



Ms. Raunak Jha opened the discussion with the question on Challenges faced by the Health Insurance industry and the role of Appointed Actuary in it. Mr. Vishwanath believed that lower insurance penetration, in single digits, is the prime concern for the industry as it leads to anti-selection and high cost also. As an Appointed actuary, they can design simple products that can be

easily understood by masses and price appropriately. Among some of the other challenges discussed were high cost of distribution, high loss ratio and incomplete or inadequate data. This was followed by the next question on the challenges faced while pricing the Indemnity products. Mr. Saha highlighted some of the challenges like meeting the minimum rate of return on the products, difference in the experience of new Vs Tenured business, etc. The Panel also discussed about the impact of the new Government health insurance coverage - Ayushman Bharat. The panelists were very optimistic about its impact on increasing awareness, scope for introduction of new top up products, increased financial literacy etc. The new wave of wellness programs, data and digitization were also some of the topics for discussion. The Panel feels that the wellness programs can help in containing claim costs and are also a great engagement tools to increase the renewal rate on policies. In this era of digitization, fraud analytics and risk scoring etc. can also be leveraged.

Session : Technical Note on Product Pricing - Best Practice

Speaker: Mr. Shyama Prasad Chakraborty



Mr. Chakraborty spoke about the best practices to be followed by the insurers while filing the product with IRDA. He opened the session with a discussion on what is the purpose of the Technical note and what should be included in the Technical note. Technical note is a complete document on how the product is priced which includes details about benefits structure and Terms & Conditions, data used to price the product, pricing methodology and assumptions, etc. He also covered other important aspects of Technical note like consistency checks on pricing and other considerations, Margins, Discounts or loadings to Gross Premium, Premium table or rate chart, Terms for cancellation /termination of contract, expected business projections in terms of premium income, number of policies,

expected business mix, loss ratio, combined ratio, any actuarial judgement, profit test, sensitivity or scenario test results, etc. He then spoke about each of the items on the Technical Note at length- key points to be included, not to be included, topics to be covered in detail and where we need comments from appointed actuaries. He mentioned that all the above aspects are also applicable for modifying existing products. Claims experience for at least last 5 years is required to justify the rationale for modification.

Session : Pricing of Community based Health Insurance Products - Data and Methods

Speaker: Mr. Atanu Majumdar



Mr. Atanu initiated the discussion with a discussion on the glaring reality of the Indian Insurance market where only 20% of the population is covered by various Insurance schemes while a majority of the untapped market lies in Micro insurance schemes. Micro Insurance is implementing insurance mechanism at the micro level of the society. This community has very little understanding or negative understanding of how insurance works. Hence, the need for Micro insurance which has to be voluntary requires contribution from the community and has to be managed by the community. He then spoke about the premium calculation methods to be used for such schemes which includes, community rated method where everyone pays same premium irrespective of their risk and income level so it's simply total healthcare expenditure divided by the size of community. The other method calculates premium using statistical distributions for incidence rates and average cost per incidence to arrive at a compound distribution and using Monte Carlo simulation for various combinations of caps, threshold and copays to create an Excel calculator. A few packages consisting of various coverages are shortlisted through a workshop with the community gate keepers, which are then printed on a CHAT board and taken to the community. The Key learning from the schemes is that a simple, well

managed scheme by the community can be both affordable and profitable. A win-win solution for our country is a hybrid model, involving both commercial insurance and community based insurance.

Session : RBC: The building blocks of the framework

Speaker: Mr. Rajesh Dalmia



Mr. Dalmia highlighted the shortcomings of current Solvency regime where same formula is used to calculate solvency margin across all product types irrespective of their risk and there is no incentive for companies to have a risk management program in place as the current formula doesn't allow for any rebates or discounts. Thus we are moving towards Risk based capital. Mr. Dalmia then discussed about what Risk based capital is and what its key drivers are. Some of them were changes in global economy, consistency in valuation of assets and liabilities, efficient use of capital and better risk management, etc. Further he discussed about some of the important aspects connected with Risk and capital and what are the possible options. Some of them were:

- ♦ What constitutes capital and liabilities- Debt, Preference shares, equity, unsecured debt
- ♦ What should be included / excluded from calculation - inadmissible assets and liabilities
- ♦ Valuation bases - book value, market value or fair value
- ♦ Establishing relationship between risk and capital - through factors or stress tests
- ♦ Which risks to be included - non quantifiable, emerging risk
- ♦ Diversification benefits
- ♦ Clear regulatory action ladder

The session continued with a discussion on types of risk and what is prescribed methodology to quantify them - factor based, stress test or qualitative. He also shared some of the recommendations, survey findings of the RBC

committee and what will be required from IRDA once we go live with the recommendations. Some of the other aspects discussed during the session were current economic capital framework, key challenges with RBC, solvency II framework and how capital calculation varies between Solvency I, Solvency II and RBC. Mr. Dalmia concluded the presentation with a Global overview of the RBC framework with a focus on Asia pacific region.

Session : Indemnity Product Performance Review

Speaker: Ms. Neha Taneja, Mr. Rachin Aggarwal



The purpose of the session was to understand the importance of Product Performance review and how it is done. The speakers (combine Photo_IMG-20180802-WA0079 & IMG-20180802-WA0089) began with an explanation of what, why and how of Product Performance Review. It's an analysis of Claims experience and actual Vs expected analysis of key metrics like business mix, incidence rates, average claim cost, trends, and expenses. It helps in decision making, benchmarks, develop assumptions, etc. They also stressed upon the need to have good quality data for any qualitative analysis. Hence, the focus shifted to a discussion on the complications in data processing, for e.g., discrepancy in claim amounts, dates in the claims data, procedure and diagnosis codes. Bad quality data can be costly to business and thus there is need for data quality assessment tools like data validations, edits, thresholds, data credibility assessments, combinational integrity, reconciliation with financials data. The speakers also talked about the two types of analysis that can be performed on data- basic and advanced. Basic analysis included - one way and two way analysis of key metrics.

Advanced analysis included:

- ♦ Health Cost guidelines (HCG) to classify claims into service categories which can be helpful for

benchmarking, pricing, etc.

- ♦ Chronic condition Hierarchical groups (CCHG) which is helpful in explaining trends in utilization and costs
- ♦ advanced risk adjusters that calculates total risk score per member representing the overall healthcare resource utilization for each member relative to the average
- ♦ Generalized Linear modelling for pricing segmentation, customer behavior analysis etc.

To summarize, with due consideration to the business question, data available and data needed, we need to identify the most suitable type of analysis.

The Seminar concluded with a vote of thanks by Ms. Yogita Arora to all the speakers for sharing their valuable insights on the areas of concerns, new developments in the industry and pricing techniques.

Written by



Ms. Neha Birla



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“ Ms. Neha an Associate actuary working as Manager for H&B Actuarial and Financial team with Mercer Services India Pvt Ltd. ”

FEEDBACK

Few topics could be prepared ore towards practical side rather than theoretical specially topic no. 7

Greater link to business problem will help

Request to provide e-mail id of all the speakers for purpose of mailing CV

Including topics on long term view could be great

You should at least have international speakers

session 8 was essentially an advertisement for Milliman. Such session should be prohibited

Content mostly aimed at student. Can be more balanced

Would help if practical case studies can be included for people who are not from the field of actuarial science e.g.: including pricing for a standard health indemnity product

Why was there no one from IIB

Would love to have some insight on valuation as well

1st Capacity Building Seminar on IFRS17

Organized By: Working Group on IFRS17, IAI

Venue: Hotel Westin Garden City, Mumbai

Date: 24th August 2018

Introduction

The first capacity building seminar on IFRS17, held in Mumbai on 24th August 2018, attracted over 200 participants. Several countries across the globe are expected to adopt accounting standards, International Financial Reporting Standard 17 “IFRS17” from 2021. India is expected to adopt accounting standards, Ind-AS117, which is a modified version of IFRS17 to suit the Indian context, from 1 April 2020. The seminar focused on providing a high level overview of the IFRS17 (or Ind-AS117) accounting standards and discussed some of the challenges with the implementation of these standards. The lack of preparedness of the Indian insurance industry regarding the adoption of these standards was highlighted during each of the sessions at the seminar, which makes the purpose of such seminars extremely relevant.

Welcome Address

Speaker: Mr. B.N. Rangarajan, Mr. Sanjeeb Kumar



Mr. B.N. Rangarajan, in his opening remarks, stated that the purpose of the seminar was to provide a high level overview of IFRS17 and that the working group intends to organize more practical-based sessions in future. He also urged members of the IAI to become part of the working group and contribute through taking part in discussions and assist in drafting guidance notes regarding interpretation of the proposed accounting standards.



Mr. Sanjeeb Kumar, in his welcome address, mentioned that “the accounting standards are thick; and issues are many”. He emphasized that the purpose of the seminar was to identify as many issues as possible rather than attempt to obtain solutions to these problems. He highlighted that adoption of IFRS17 (or Ind-AS117) is a significant change to the existing accounting framework of insurance companies in India and will affect business strategies of companies including underwriting practices, asset-liability management, product strategy, reinsurance etc. Following these changes, the role of an actuary in an insurance company will become more significant as majority of line items of the income statements will require actuarial inputs.

Key Note Address

Speaker: Ms. Pournima Gupte



Ms. Pournima Gupte clarified that her speech reflects her personal views which may not be the views of the IRDAI. She made several relevant remarks during her

speech. Following the adoption of Ind-AS117 in India, more coordination will be required between the actuarial teams and the accounting teams at insurance companies, which will also enable both teams to understand the business better. This may also lead to improved business management (including product management and risk management) which will ultimately benefit the customers. Further, with more items within the insurers' financial statements requiring actuarial inputs under the proposed accounting framework, the work of actuaries may be expected to adhere to more stringent audit requirements. She urged the participants to discuss issues with the implementation of Ind-AS117 some of which she noted to be: ambiguity in the treatment of participating business; lack of technology in public sector undertakings to be able to support requirements of Ind-AS117; tax implications and dialogue required with the tax authorities; possibility of regulatory reporting framework being different to Ind-AS117 as prudential solvency requirements and accounting standards aim to meet different objectives.

Session : Overview of IFRS17: Insurance Contracts / Ind AS 117

Speaker: CA Shrenik Baid, Mr. Mahasen Kunapuli



This session focused on providing the participants with an overview of the IFRS17 / Ind-AS117 accounting framework.

The speakers began by stating that one of the key objectives of the new accounting framework was to aid comparability of financial statements between entities that write insurance contracts and to also ensure consistency with other accounting standards. Ind-AS117 is expected to be effective from 1 April 2020, therefore, any implementation issues need to be discussed by the industry and escalated to the relevant authorities so that any concerns can be addressed in time. The speakers described the contracts to which IFRS17 will apply as per the text of the framework.

The speakers went on to explain a range of terms, which are key to understanding the IFRS17 accounting

framework. A key reporting change was identified to be the method of grouping contracts. As per IFRS17, a “portfolio” is a group of contracts subject to similar risks and managed together as a single pool. The portfolio is then required to be disaggregated into groups of insurance contracts that at inception are: onerous at initial recognition (or inception); not onerous at initial recognition and have no significant possibility of becoming onerous subsequently; and all remaining contracts. Further, only contracts within the same 12 month period or shorter may be grouped together.

The session provided an overview of the measurement models allowed under IFRS17 to recognize insurance liabilities. These can briefly be summarized as:

- ◆ General measurement model or Building block approach (BBA): Simply put, insurance liability is calculated as the sum of Fulfilment Cash flows (FCF) and Contractual Service Margin (CSM). FCF is the sum of best-estimate liability (BEL) and an adjustment for risk (known as “Risk Adjustment”). CSM represents the unearned profits (and in concept is similar to the “value in-force” under an embedded value framework).
- ◆ Premium allocation approach (PAA): This is applicable where coverage period of insurance contracts is less than one year or in the event that this would produce a measurement not materially different to one under the BBA.
- ◆ Variable fee approach (VFA): Similar to the BBA in structure and may be applicable to contracts subject to certain conditions being met. One such example is unit-linked contracts.

The standards define the applicability of these measurement models to insurance contracts. Further, the presentation of change in insurance liabilities calculated using the three measurement models on the financial statements differs with some changes being routed through the “profit and loss account” while others being presented as part of “other comprehensive income”.

Ind-AS117 will introduce significant changes to the formats of the financial statements being prepared by insurance companies in India currently. Although, Ind-AS117 will be effective 1 April 2020, financial statements as at 1 April 2019 will also need to be prepared on the proposed framework for comparison purposes. The industry needs to understand the requirements of Ind-AS117 and form plans to be able to implement the framework by 1 April 2020, including employing appropriate resources and systems.

Session : Demystifying Ind AS 117

Speaker: Mr. Philip Jackson



Mr. Philip his session by drawing an interesting analogy between the balance sheets under market consistent embedded value (MCEV) framework, risk based capital regimes (RBC) and IFRS17. This was useful as the stakeholders of the Indian insurance industry are more familiar with the concept of MCEV.

In particular, the adjusted net worth (ANW) under an MCEV framework can be defined as the market value of assets less value of liabilities; where in value of liabilities can be thought of to be the sum of BEL, time value of financial options and guarantees (TVFOG), frictional costs (FC), cost of residual non-hedgeable risk (CRNHR) and present value of future profits (PVFP) which arise from prudential margins within the statutory liabilities. The IFRS equity, at a high-level can be thought of as market value of assets less insurance liabilities wherein insurance liabilities are defined as sum of a BEL (similar to MCEV), BEL for guarantees and Risk Adjustment (similar to concept of TVFOG, FC and CRNHR under MCEV) and CSM (which represents unearned profits such as the concept of PVFP in case of MCEV).

He then explained that income statement for non-participating contracts under IFRS17 will comprise of three key elements and drew an analogy with the components of a typical analysis of movement (AOM) in MCEV:

- ♦ Insurance service result: representing, in simple terms, the variance in actual vs. expected operating experience and unwind impact of discount rates.
- ♦ Net investment result: representing, in simple terms, the variance in book value returns vs locked-in investment returns
- ♦ Other comprehensive income: representing, in simple terms, fluctuations in market value of assets and liabilities due to market fluctuations.

He added that net investment result and other comprehensive income may be compared with line item “economic variance” and insurance service result may be thought of as including all other items (such as unwind, value of new business, assumption changes, operating experience variance).

Under IFRS17 framework, measurement rules may vary depending on the nature of the contract. The treatment of certain contracts is still being debated e.g. participating products. As explained by the speaker, the choice of measurement model for liabilities affects the value of insurance liabilities and its presentation on the income statement - in particular, the volatility in investment returns is presented as part of insurance service result if a VFA approach is adopted.

Philip then went on to explain the presentation of income statements using some numerical examples. In particular, he demonstrated how presentations will be affected under a set of scenarios such as: worsening operating experience with no change in operating assumptions, worsening experience coupled with change in operating assumptions, variance in expected investment income and earned investment income.

Overall, the session provided a useful overview of the IFRS17 set up and some of its requirements. The session was largely interactive and engaged the audience in discussions.

Session : IFRS17: preparing for take-off

Speaker: Mr. Kunj Maheshwari



Mr. Kunj started his session with some interesting figures to put preparation for IFRS17 implementation and challenges into perspective. Drafting of IFRS17 framework took around 20 years, while only 20 months remain for its implementation by Indian insurers. He highlighted the high expected implementation cost as estimated by the CFO Forum to be €50-320 million; as also stressed on the limited field testing for these standards globally compared with Solvency II implementation.

He added that currently most of the entries in financial statements are transactional as they are recorded as they occur; however under IFRS17 most of the entries in financial statements would need to be computed - either by finance or actuarial departments of insurance companies; representing a significant change to the existing accounting setup.

Kunj quickly listed several key implementation challenges for insurance companies including interpretation challenges, timelines, system constraints etc. and then spoke in detail about the “application of judgement” given IFRS17 is principle-based and not prescriptive. To explain the wider application of expert judgement and subjectivity while implementing IFRS17, Kunj focused on “Risk Adjustment”. He conducted a quick live poll with the attendees where he asked people to choose the price they would pay for a scenario which pays INR50 with probability of 1, or INR100 or INR 0 with probability of 0.5 each. The poll results showed that majority of people chose the risk-averse option, followed by the risk-neutral choice. Kunj correlated the poll choices and results with the calculation of Risk Adjustment under IFRS17 and explained that IFRS17 envisages Risk Adjustment to be entity-dependent and not based on market's or industry's view as may be captured in risk margins under an RBC framework (such as Solvency II) or within quantification of CRNHR in MCEV. Various approaches may be used by an entity while determining the Risk Adjustment, such as, confidence interval approach as used currently within margin for adverse deviations in India; cost of capital approach similar to that used in MCEV; conditional tail expectation (or TailVaR); adjustment to discount rates and/or other assumptions; among others. This segment was interactive as audience discussed relative advantages/disadvantages of one approach over other. Kunj also discussed whether the entities in India should be left with freedom to apply judgement based on their own assessment of risk-reward relationship; or should IAI or IRDAI come up with specific guidelines around its methodology/calculations, such as possible synergies between yet-to-be proposed RBC framework and IFRS17. Further, while some approaches maybe conceptually sounder others may be more practical to implement - and this may also affect the choices that an insurance company makes. Further, the choice made by a company may also affect the presentation of information on its financial statements as certain methods may produce more stable income statements compared to others. Kunj also provided a quick summary of such areas of judgement which may exist in other sections of the IFRS17.

Speaking on various performance metrics used today ranging from revenue-based to solvency or profitability-based metrics, he stressed on the point that IFRS17 will be an accounting view of expected profit emergence

whereas the actual profit emergence may differ in reality. He also emphasized on different objectives of regulatory and financial reporting, as the former addresses solvency and policyholder protection while the latter focuses on transparent and fair representation of financial health to stakeholders. To conclude, he provided a snapshot of current and expected jurisdictions across the globe which suggested that regulatory and financial reporting may not necessarily be aligned.

Session : IFRS17 - Implementation Challenges

Speaker: Mr. Kshitij Sharma



Mr. Kshitij began his post-lunch session on a lighter note with an interesting take on various phases of a 'change' (similar to the IFRS17 implementation) which includes denial, followed by anger, discussion, and depression as the challenges seem significant, and finally its acceptance. He started with a quick summary of key themes of IFRS17 framework. He provided a roadmap for insurance companies setting out the key stages towards successful implementation of IFRS17 beginning with appropriate training, communication and engagement with stakeholders; determining key business areas expected to be impacted; conducting a gap assessment for operations, data/systems etc.; taking key design decisions in respect of systems and technology; and finally preparing for implementation.

In his next segment which saw active engagement by the audience, he discussed 10 areas in IFRS17 framework where there is scope of multiple interpretations as well as discussions:

1. Identifying Portfolios of Contracts - The principle states that contracts with similar risks and managed together are to be recognized as portfolios. He highlighted that the framework uses the phrase 'similar risks' and not 'identical risks' risks, which can be interpreted to consider all risks together, instead of just insurance risks.

2. Grouping of Contracts (1) - Risk factors to be considered when determining whether a contract can (potentially) be onerous have not been defined. Therefore, in practice, contracts may be grouped between onerous and 'others' as the entity may set a high standard when determining the possibility of contracts becoming onerous after inception.

3. Grouping of Contracts (2) - The granularity of identification of contracts as onerous is left open to interpretation and this could, for example, depend on granularity of entity's experience analysis.

4. Contract Boundaries - Kshitij explained that it would require assessment of entity's substantive obligation under a contract to determine the end of period and highlighted that contract boundary can be established based upon the entity's practical ability to reassess risks and adjust the same in premium. This can be at portfolio level as well given risks beyond contract boundary are not considered in the premium rate.

5. Expenses - The framework allows 'directly attributable' expenses to be allowed within FCF, however whether this relates to current or long term expenses is open to interpretation.

6. Separating investment component - Amount payable under contract not related to insured event was discussed, such as surrender value. He explained that this may not impact CSM as investment component would be deducted from both actual and expected claims. He debated the appropriate means for separating investment component as surrender value may be impractical for products like mortgage protection. Further the nil surrender value period in the Indian market context may also pose a challenge in this regard.

7. Releasing CSM: Coverage units - The framework provides some freedom to companies to choose coverage units to run-off CSM. The choice of driver will impact the emergence of profit.

8. Variable Fee Approach (VFA) - While VFA has been stated to be used for products with direct participating feature; the underlying conditions for a product/contract to meet the same can be subjective. E.g. a standard participating contract may appear to meet most of the conditions, however, it may not qualify in a particular situation where the guarantee offered is quite high and the policyholder benefits do not vary in reality with the fair value of the fund.

9. Impact on Reinsurance - Contracts are required to be shown gross of reinsurance as reinsurance asset/liability are required to be presented separately. This may have certain implications e.g. a product which is reinsurance

supported and is onerous (loss-making) without reinsurance. While loss on onerous contracts will be recorded immediately, CSM on its reinsurance will be released over time. Further, the portfolio of base and reinsurance contracts could also be different leading to further mismatches.

10. Transition Approach - Kshitij concluded his session with final remarks on choice of approach for transition. While entity would need to justify not using the Full Retrospective Approach owing to impracticability concerns; either of Modified Retrospective Approach or Fair Value Approach can be used.

Session : System - What change to be made to Admin / Actuarial systems?

Speaker: Mr. Manan Sharma



This session focused on the changes that may be required to systems and process to meet the requirements of IFRS17.

One of the key takeaways from this session was that IFRS17 will require systems of the finance team and the actuarial team to interact with each other as a number of line items of the income statement will require input from both teams. For example, in case of insurance service result while actual claims data will be an input from the finance team, the expected claims payment will be an input from the actuarial models. Therefore, much greater coordination will be required between the two departments and will affect the way companies operate at the moment.

Further, IFRS17 requires contracts to be grouped based on whether they were onerous at initial recognition or not; and the maximum duration between two contracts within the same cohort can be 12 months. Therefore, systems need to be set up to be able to produce results at a cohort level. This may require existing systems to be reviewed to ensure these are capable of meeting reporting requirements of the new standards. It will need to be ensured that mapping of policies to cohorts

is consistent between the data maintained by the actuarial teams and finance.

Actuarial modelling platforms will also need review by companies as part of implementation of IFRS17. While some companies may be able to upgrade existing models to include IFRS17 related calculations, others may think of revamping existing systems and models to make them efficient.

The speaker concluded by stating that reporting requirements have been increasing for insurers and are set to become more complex after the introduction of IFRS17 framework, therefore, automation of processes and systems is the way forward and insurance companies should also begin to think of ways of making these more efficient.

Session : Panel discussion on how to implement IFRS17 within the timeline and how the Profession (both CA/Actuarial) could come together in addressing common issues

Panelists: Mr. Pravin Kutumbe, Mr. Vidhyadhar Kulkarni, Mr. Sai D Srinivas, Mr. Rajesh Dalmia

Moderator: Mr. Satyan Jambunathan



The panel discussion was based on questions (Q) from Mr. Jambunathan as moderator and responses (A) by panelists on various aspects of IFRS17 implementation in the context of Indian insurance market. Below are the excerpts from the discussion:

Q: Is the draft Standard, Ind-AS117, equivalent of IFRS17 in India, expected to undergo any change?

A: Mr. Kulkarni mentioned that the ICAI had taken in feedback from various stakeholders, including the working group formulated by the IRDAI, on the earlier drafts circulated by the International Accounting Standards Board (IASB), and reflected

the same in the latest draft of Ind-AS117. There are no major changes expected as of now.

Mr. Kutumbe added that further clarifications may be issued on various aspects of the Standards, however any major changes to the draft Ind-AS117 are not expected.

Q: Can you please confirm on the date of implementation of the Standards in India?

A: Mr. Kutumbe responded that the date of implementation will be 1 April 2020 and the industry must start working towards achieving the same.

Q: What is the status of practical preparedness of the industry in respect of IFRS17 implementation?

A: Mr. Srinivas replied that the industry has only recently initiated efforts towards understanding IFRS17 and does not seem to be prepared practically.

Q: From experience in other markets, how much time would be needed in IFRS17 implementation by Indian insurers?

A: Mr. Dalmia responded that based on his observation of the implementation work being carried out in other regions, a small insurer may take more than a year while a medium to large sized company may require 2-3 years.

Q: In light of the discussion so far, it should be a wake-up call for the industry as they will need to be prepared to start recording IFRS17 related data from April 2019. How can the ICAI and IAI help to prepare for proper implementation?

A: Mr. Kulkarni suggested that the industry must use the time period between April 2019 and 2020 for parallel runs and tests, on a monthly basis, for thorough checking and corrections. He added that the ICAI can help by providing clarity on the Standards where needed, providing educational material with examples, and issuing bulletins and webcasts for training; working along with the IRDAI and IAI on developing these material.

Q: How can the regulator, IRDAI, help in this regard?

A: Mr. Kutumbe responded that discussions and dialogues with the regulator would be welcome to arrive at consensus wherever there are ambiguities. He also suggested the industry to “re-learn” to ensure that businesses are not disrupted

due to IFRS17.

Q: How can the industry get together to tackle these challenges?

A: Mr. Srinivas suggested that industry level forums are needed as a platform to share knowledge, skills and best practices, and to raise the concerns faced for better resolution quickly.

Q: How much can the implementation cost be to an entity?

A: Mr. Dalmia responded based on his experience in the region that cost for systems can range from US\$1-5 million, and additional 50% of this cost may arise from implementation work. However, such estimates for India are not available as no significant activity has happened so far.

Q: Given the significant cost and people implications, what is the level of awareness within Indian companies?

A: Mr. Srinivas informed about initial awareness within finance and actuarial teams only. He added that there was a need to bring the senior management and other departments on board as well, as proper allocation of work will be required.

Q: In order to avoid chaos, how and when should the communication to external world or management be done on impending changes and their potential impacts?

A: Mr. Srinivas suggested that there was a need to first understand and educate ourselves on the changes and its impact before communications to other stakeholders are done.

Q: Is there a need to provide sufficient disclosures or comments in the financial statements prior to the implementation of Ind-AS117 on the potential changes expected?

A: Mr. Kulkarni responded that there was a need to indicate the likely changes along with some impact analysis. Further, commentaries should include impacts from other standards as well, such as Ind-AS109 on financial instruments. He added that initial comments can be qualitative followed by quantitative impact analysis in the subsequent financial statements running up to the implementation date.

Q: Valuation of liabilities has historically been based on regulations, however going forward it may be based on accounting standards. This may require audit and assurance support as well. What are the things to consider?

A: Mr. Kulkarni responded that the audit professionals will also need to be taken on-board. The Accounting Standards Board is alert to such changes. Training of auditors will be required, along with adequate dialogue between auditors and the insurance regulator. Mr. Kutumbe added all concerned stakeholders will need to be on-board for this monumental change, as the impact of poor implementation can be disastrous for the industry.

The panel then opened the floor to questions from attendees. One of the questions was on cost implications of IFRS17 implementation as to whether it should be borne by the shareholders or passed on to the policyholders. Mr. Dalmia suggested that the immediate cost may be borne by the shareholders, while in the long run it may be passed on to the policyholders. Mr. Jambunathan added that the purpose of a change is required to be analyzed to assess cost implications. Concerns were also raised by one of the attendees on bandwidth of the current resource pool of the industry for implementing such a significant change, in addition to the activities which are 'business-as-usual'. Responding to a question on amendments needed to current regulatory guidelines/acts owing to IFRS17 related changes, Mr. Kutumbe mentioned that the regulator will consider any appropriate changes to the current statutory acts/guidelines as required.

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The Indian Actuarial Profession has declared 21st August as "Actuaries Day" on the birth Anniversary of Late Shri L S Vaidyanathan, the first Actuary of India. On the first Actuaries Day - 21st Aug 2018, the Institute decided to observe it on a large scale with a host of activities planned across 5 locations - Mumbai, Bengaluru, Chennai, Delhi NCR and Hyderabad. The event was organised simultaneously across all these locations.

Decision to observe 21st August as Actuaries day is an excellent initiative by the Institute which will help spread awareness about the profession among the youth of the country, showcase the capabilities of the members of the profession to the outside world, spread camaraderie and a feeling of strength and togetherness among the members of the Institute and act as a medium for all the members of the Institute to come together and collectively take the profession forward. The passion and excitement about the same among the actuarial community was there for all to see as the registrations for the event were full within a few hours of opening and the Institute had to increase the capacity at almost each centre to accommodate all the interested students / associates / fellows.

The Delhi NCR event was organised at The Le Meridian Hotel in Gurugram between 1530 and 1730 hours. The event was attended by close to 70 members of the Institute with a large majority of those being student members indicating the excitement for the event among the young and upcoming generation of actuaries. The event started off by observing a 2 minute silence to honour the life and mourn the death of the **Lt Sh. Atal Bihari Vajpayee**, the honourable former Prime Minister of India who died on August 16 after a prolonged illness, at the age of 93.

This was followed by Welcome Address by **Mr Pravir Chandra**, the Honorary Secretary of the Institute of Actuaries of India. **Mr. Chandra** welcomed all the members of the profession present at the event, including the senior actuaries of the country, who were being felicitated by the Institute on that day. Mr Chandra also made a number of announcements on behalf of the Institute such as holding an additional diet in Dec 2018 for those exams which are undergoing a major syllabus change from the year 2019 onwards, reduction in online and offline coaching fee for the Dec 2018 diet and implementation of the revised APS 9 (CPD and the Actuary) from 1st Apr 2018 onwards. All these announcements were well received by the audience.

This was followed by a talk on the life and career of **Lt. Sh. L S Vaidyanathan ji**, on whose birth anniversary the Actuaries Day has been organised. **Lt Sh Vaidyanathan ji**, was the first Fellow of the Institute of Actuaries of India (erstwhile Actuarial Society of India) and was the first President of the Institute on its formation in 1944. The talk was given by **Mr. K K Wadhwa**, a Fellow member of the Institute and one of the 9 senior actuaries being felicitated by the Institute that day, at Gurugram. The talk was as recollected and penned down by **Mr. M G Diwan**, himself a Fellow of the Institute and who had interacted greatly with **Lt. Sh. Vaidyanathan ji**, during his career. It was an eye opener for almost everyone present at the event hearing about the contributions of **Lt. Sh. Vaidyanathan ji** towards the establishment and development of the Actuarial profession and growth of the Insurance industry in India. From preparing the first mortality investigation report of the Indian population based on 1931 census, investigation of mortality of Indian Assured Lives based on the experience of Oriental Government Security Life Assurance Company Ltd., being part of the Central Legislative Assembly which considered the Insurance Bill (which later emerged as the Insurance Act 1938) and working in the capacity of Chief Executive of Oriental and Managing Director of LIC, the contributions of **Lt. Sh. Vaidyanathan ji** remain unmatched to this day.

This was followed by a talk on the past, present and future of the actuarial profession by **Mr. Khushwant Pahwa**, a Fellow member of the Institute, who recounted how the profession has changed significantly over the course of the years that he has been a member of the Institute. He recollected how at the time he started his career, actuarial was a relatively unknown profession with a very small number of qualified actuaries in the country. He compared that to the current scenario where spreading the actuarial profession to newer application areas such as Data Analytics, Economics, Commercial Banking and Investment Banking are at the top of the Profession's agenda.

This was followed by the main event of the evening which was the felicitation of the senior actuaries for their contributions to the profession. At the Gurugram event, the Institute thanked and honoured 9 senior actuaries, aged 75 or more - Mr. H L Jain, Mr. AD Gupta, Mr. B P Gupta, Mr. M L Sodhi, Mr. A Balasubramanian, Dr Y P Sabharwal, Mr. Liyaquat Khan, Mr. K K Wadhwa and Mr. K K Dharni. Mr. B P Gupta and Mr. Liyaquat Khan were not present due to prior commitments. The

senior actuaries were honoured by Mr. Pravir Chandra with a shawl and certificate. All of the felicitated actuaries recounted stories and experiences from their long actuarial career and shared with the audience who were thrilled to learn from the stalwarts of the profession.

The last part of the event was a quiz for the young student members present at the event. There were prizes to be won for the right answers and the questions drew active involvement from all the students. The questions ranged from the year of establishment of the Actuarial Society of India to growth in first year premium income of the industry in the FY 2017-18. One of the questions, infact, (on the annuitant mortality table) could not be answered by any student member and the correct answer was given by Mr. K K Wadhwa, a senior Fellow member.

The event concluded with a Vote of Thanks by Himanshu Bhatia, an Associate member of the Institute. Himanshu thanked the Institute for organising the event and for giving a chance to all members to interact with one another, the senior actuaries for attending the event and sharing their experiences and all the speakers and organising members of the event. This was followed by High Tea, which gave everyone a chance to network with the fellow members of the profession.



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Observation of Actuaries Day in Bengaluru

The Actuaries Day celebration is an unique concept in the history of the Actuarial Profession in India. We have Teachers' Day, Engineers Day, etc. Every profession is identified by the pioneers in its field. August 21st 2018 was observed for the First time as “The Actuaries Day” throughout India in commemoration with the birth anniversary of **Shri Late L. S. Vaidyanathan**, who happened to be the first Fellow Actuary in India. Mr Mahidhara Davangere, the Chairperson of Working Group on Wider Areas of actuarial Application co ordinated the events in Bengaluru. All the members were given the Actuaries Day Badge.

In Bengaluru, the Actuaries Day Celebration was organized at the Marriot Hotel Rajajinagar. It was a working day, however more than 50 members from the Institute gathered in the venue for the official celebration from the IAI in Bangalore. Veterans in the field - **Mr. N Rangachary**, the first chairman of IRDA, **Prof. R. Vaidyanathan**, PhD, Professor of Finance and Control and UTI Chair Professor in the area OF Capital Market Studies at Indian Institute of Management, Bangalore (IIMB), **Mr. Govardhan** ex LIC chairman and **Mr. Mahindra Upadhyaya**, Education Secretary of IAI were the key dignitaries of the event.

Mr. Chintan Devakole was the emcee for the evening. The event began around 17-00 hrs. with the welcome address given by Mahidhara. He emphasized the importance of this day by giving a brief introduction about the need for the event and he also welcomed the dignitaries. The crowd was overwhelmed when he read the special announcement made on behalf of the President **Mr. Sanjeeb Kumar**, that there were

relaxation of norms for the Senior Fellow Members in terms of their CPD and there would be additional exam for selected CT series in December 2018 for the benefit of student members in view of the changing curriculum in 2019.

A brief remembrance speech for **Shri Late L. S. Vaidyanathan** was made by **Ms. Swara Shruthi**, A student member of IAI. This was succeeded by an enthralling session with the pioneers sharing their walks of life in the fields of Actuarial Science. **Prof. Vaidyanathan** gave key note address and he emphasized his acquaintance with Actuaries and their importance. Among the Fellow members who shared their journey as actuaries were **Ms. Hema Malini**, **Mr. B N Rangarajan**, **Mr. Sumit Ramani** and **Ms. Megha Garg**. They motivated the student members towards exploring the new ways. The day was further cheered up by a quiz wherein participants were rewarded. The events concluded by honouring the veterans and by acknowledging them for their huge contribution to the field. Later all the guests joined in for a hi-tea. Among the volunteers who supported the event were the Student Members from IAI, Christ University students, Staff from Pramatha, Exide Life and SwissRe.



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Celebration in Mumbai



L.S. Vaidyanathan, FIA





Celebration in Bengaluru



L.S. Vaidyanathan, FIA





Celebration in Chennai



L.S. Vaidyanathan, FIA





Celebration in Gurugram



L.S. Vaidyanathan, FIA





Celebration in Hyderabad



L.S. Vaidyanathan, FIA





Celebration in

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Bajaj Allianz Life



Birla Sun Life Insurance



Canara HSBC



Cigna TTK Health Care Insurance



IDBI Federal



India First Life Insurance Co



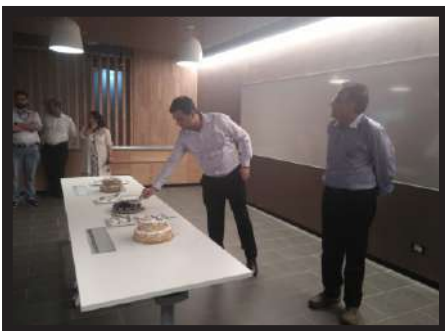
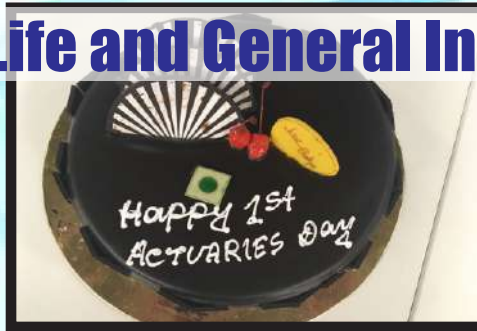
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Celebration in

Kotak Life and General Insurance



BLOG FROM AKSHAY DHAND APPOINTED ACTUARY

Dear Colleagues,

Tomorrow marks the first "Actuaries Day" being celebrated by the Institute of Actuaries of India on the occasion of the birth anniversary of the first Indian Actuary, Late Shri L S Vaidyanathan. I would like to take this opportunity to congratulate all the actuarial professionals within the Company and thank them for all their contributions to the business.



Actuarial professionals form the backbone of insurance and pension industries as they are involved in all aspects of working in these from the designing and pricing of products to managing financial risks underlying the business once it is on the books. They are responsible for protecting the interests of policyholders/pensioners and ensuring that the insurers/pension funds remain financially sound. The role of actuaries becomes even more critical in the life insurance domain as the quantum of policyholders' funds involved is large and the duration of insurance contracts can be very long into the future. Hence, it is extremely important for actuarial professionals to carry out the core technical aspects of their work diligently and with integrity as the same has direct financial consequences for the insurers as well as policyholders. Further, given the fast changing nature of the industry and regulatory landscape, the role of actuarial professionals is becoming much more strategic in nature whereby they are required to advise insurers on way of achieving sustainable and profitable growth in business. In order to meet the demands of the new dimensions of their roles, they need to ensure that, besides honing their technical expertise, they also remain connected to what's happening in their individual companies as well as in the industry across all spheres, be it distribution, customer service or technology initiatives.

An actuarial professional's career can often be very daunting, especially in the beginning, as it involves taking the professional examinations required to qualify as an actuary along with a full-time job. Given the level of difficulty of these exams and the strict passing criteria, it usually takes students a number of years to clear all the fifteen exams and qualify as an Actuary. Further, given the limited study support available in India, a student is often left to his or her own devices for exam preparation and hence needs to really have a lot of self-motivation to be able to make progress time and foregoing areas of interest outside work. Despite such hurdles, it is heartening to see the growing amount of interest in the actuarial profession in India with the number of aspirants increasing significantly over the years.

As we celebrate the first edition of Actuaries Day in India, I would encourage all actuarial professionals to take time to reflect on not only their achievements till date but also on how to improve their skill sets to suit the needs of the changing business world. This will ensure that we continue to remain effective in supporting insurance, pension and other relevant businesses in the future and take our profession to greater heights.

HAPPY ACTUARIES DAY TO ALL!



Best Wishes,
Akshay

Welcome & Introduction - Mr. R. Arunachalam

Actuaries day 2018, held at The Savera Hotel, Chennai, started by observing a minute of silence in remembrance of the Late former Prime Minister of India **Mr. Atal Bihari Vajpayee**. **Mr. R. Arunachalam**, Vice President, Institute of Actuaries of India, welcomed the Senior Actuaries, Panel Speakers, Members of the IAI and other distinguished guests. He sought the blessings and guidance of the Senior Actuaries for the profession. He made announcements regarding the additional exams to be conducted in December 2018 in view of the curriculum 2018 and changes in the CPD requirements for fellow members.

Session : Talk on late Shri L S Vaidyanathan Speaker: Mr. G.Chidambar

Mr. G.Chidambar started his speech by recollecting his memory about late Shri L S Vaidyanathan. He recalled the humble contributions of Shri L S Vaidyanathan and shared glimpses of his journey as India's first Actuary. The Actuarial Society was formed in 1944 with Mr. Vaidyanathan as its first President. He was also the President of the Indian Life Assurance Offices' Association. In 1931 Shri L S Vaidyanathan was entrusted by the Government with the work of investigation into the mortality of the Indian population based on census data. His actuarial report, which was annexed to the report of Census of India 1931, distinguished itself for the knowledge, ingenuity and enthusiasm he displayed in the analysis of the massive data generated by the census undertaking. **Mr. G.Chidambar** stated that observing Actuaries day in the memory of Shri L S Vaidyanathan is the perfect way to display the honor and respect towards him. The first Indian Actuary and the first President of the Actuarial Society of India stands tall even today and as we strive and struggle to shape up the actuarial profession in the current context, we feel his presence assuring us of a great future ahead for the Actuarial profession.

Session : Keynote address-Role of Actuaries in General Insurance Speaker: Mr. Sundaresan

Mr. Sundaresan glorified the Actuarial profession and their immense contribution in the field of Insurance. He emphasized on forming an Actuarial chapter in Chennai which would be a platform for Actuaries to regularly meet and discuss more diverse subjects in Actuarial science. This move would equip the Actuaries with new Actuarial techniques and best practices which will support the

industry in all possible ways. The participants also echoed the view and requested that the institute forms a Chennai chapter. **Mr. Sundaresan** was keen about new technological initiatives and encouraged Actuaries to equip themselves in data analytics. He also highlighted that increasing demand for data driven analytics, particularly in a data driven industry like Insurance, Actuarial expertise is pivotal in driving the business in sophisticated dimensions.

Mr. Sundaresan then felicitated all the senior Actuaries and gifted them with a fruit basket.

Session : Panel Discussion 1 - Actuaries from an Outsider's view

Moderator: Dr. K. Sriram

**Panelist : Mr. S. K. Rangaswamy,
Mr. S. Santhanakrishnan, Dr. M. R.Srinivasan,
Ms. Chitra Jayasimha**

The discussion began by highlighting the rising demand for Actuaries and their role ahead in implementation of IFRS17. Bridging the gap between Academics and Industry posed a challenge and the way forward to tackle this issue to organize frequent seminars in each region across the Country and exhibit the requirements of Industry to Other professionals and Students.

Another major discussion was on communicating Actuarial Opinion to Members from non-Actuarial background and the issues to be addressed by Actuaries in refining their soft skills. All panel members stressed the need to embrace technology and adapt them to yield potential advantages from it. The discussion was concluded by noting that Actuaries role should spread across the financial sector and not to be limited to Insurance.

Session : Panel Discussion 2 - Actuaries Past, Present and Future

Moderator: Dr. K. Sriram

Panelist : Mr. G.Chidambar, Mr. V.Govindan, Mr. S.Krishnan, Mr. M.Venkatesan

The discussion began by Senior Actuaries sharing their experience about the profession and the challenges posed during their time of qualification. Opportunities that were available during their period and how technology has shaped the profession were discussed. Humility was considered as a central quality to be possessed and it should be considered as an asset for self improvement.

Senior actuaries opined that Actuarial professionals must be more receptive and agile and take up positions outside their hometown in order to move away from their comfort zone and achieve great heights. The discussion concluded on a lighter note by Senior Actuaries narrating their personal experiences and eliciting their days at work.

The event also consisted a quiz competition, which was open to all members. The quiz was conducted online and candidates were asked to scan the QR code placed at the registration desk. Thirty questions from diverse topics such as statistics, general insurance, life insurance and employee benefits were asked. **Ms. V S Rajeshwarie**, who anchored the event, announced the winners of the quiz competition who were awarded with a special prize.

The event was concluded with a vote of thanks by **Mr. Siddesh Ramasubramanian**. He thanked all the senior actuaries, Representative of IAI, Panel speakers and other guests for their gracious presence. He also thanked Ms. V. S. Rajeshwarie for acting as Master of Ceremonies and the entire volunteering team for their untiring effort in making this event a success.

Written by



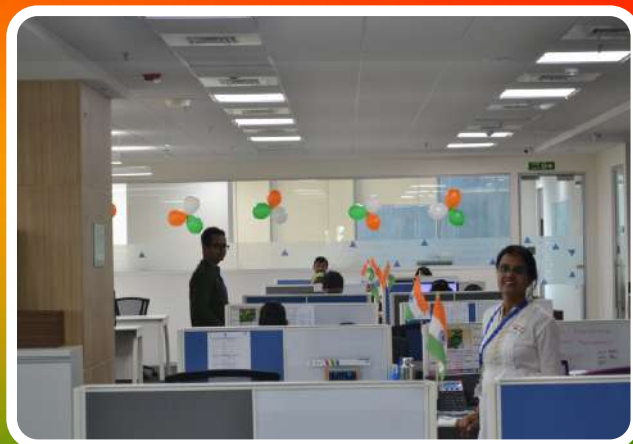
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Independence Day Celebration at Institute of Actuaries of India





Institute of Actuaries of India

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;

- a. Disseminating information,
- b. Communicating developments affecting the Institute members in particular and the actuarial profession in general,
- c. Articulating issues of contemporary concern to the members of the profession.
- d. Cementing and developing relationships across membership by promoting discussion and dialogue on professional issues.
- e. Discussing and debating issues particularly of public interest, which could be served by the actuarial profession,
- f. 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;

- a. there is a growing emphasis on the globalization of the actuarial profession;
- b. there is an imminent need to position the profession in a business context which transcends the traditional and specific actuarial applications.
- c. 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:

- a. Members of other international actuarial associations across the globe
- b. Regulators and government officials
- c. Professionals from allied professions such as banking and other financial services
- d. Academia
- e. Professionals from other disciplines whose views are of interest to the actuarial profession
- f. 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.

Version history:

Ver. 1.00/31st Jan. 2004

Ver. 2.00/23rd Jan. 2011

Genetic disorders can no longer be excluded. What does that mean for insurers?

Introduction

In India, the Delhi High Court's decision in February 2018 to restrict insurance companies from rejecting genetic disorder claims has sparked worry among insurers.

This move was driven by the trial court's verdict on the case filed by a policyholder whose claims for the genetic disorder “hypertrophic obstructive cardiomyopathy” were honoured in 2004 and 2006 but rejected in 2011. The reason cited by the insurance company for disapproval of the latest claim was that genetic diseases are not payable as per the genetic exclusion clause under the renewed policy.

The court ruling indicates that policyholders with genetic disorders have been denied payment for treatment under health insurance in the past. However, the Delhi High Court upheld the decision of the trial court on covering the treatment for genetic disorders because the original policy did not have any such exclusions. In the court's opinion, the insurance company did not ensure effective communication to the policyholder on the changes made in the policy wording over the period of insurance.

The verdict of the court stated that it is unlawful to discriminate in health insurance on the basis of genetic disposition in the absence of genetic testing and unclear policy terms and conditions. It also pointed out that the exclusion clause for genetic disorders was too broad, ambiguous and discriminatory. This violates Article 14 of the Constitution of India that prohibits any kind of discrimination.

The court reviewed the following facts, including regulations on genetic disorders and insurance globally to reach its decision:

- ◆ Several medical conditions could be partially attributable to genetics, but these conditions could also be attributable to several other factors, such as lifestyle, environment, dietary habits, etc. In the absence of detailed genetic testing, it would be impossible to determine the cause of the condition.
- ◆ Different types of genetic disorders and common diseases like diabetes and cardiac diseases are

likely to be included in the broad definition of genetic disorders, leaving a large proportion of the population uninsured for these conditions.

- ◆ Without doing genetic testing, which in itself is a complex and expensive process, applying a general exclusion for genetic disorders would be unreasonable.

IRDAI guidelines on genetic disorder exclusion

The Insurance Regulatory and Development Authority of India (IRDAI) guidelines on standardisation in health insurance, dated 20 February 2013, had specific exclusions in respect of “pregnancy, infertility, congenital and genetic conditions”. However, the term “genetic conditions” was not defined in the guidelines. IRDAI allowed insurance companies to use this exclusion clause for denial of payment for genetic conditions. The 2013 guidelines have now been superseded by guidelines dated 29 July 2016, wherein only “congenital anomalies” have been defined and there is no mention of genetic conditions. Thus, “genetic conditions” can no longer be excluded.



In response to the Delhi High Court decision, IRDAI issued a circular dated 19 March 2018 to all companies offering health insurance. The circular states that:

- ◆ Claims related to genetic disorders shall not be rejected for any existing health insurance policy.
- ◆ Insurance companies can no longer use genetic disorder as an exclusion on their new and existing health insurance policies.

Impact on insurers

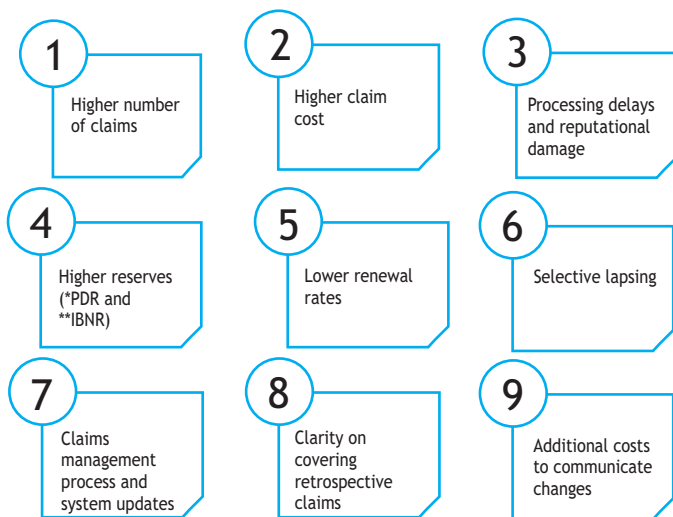
Following the High Court decision and issuance of the IRDAI circular, all insurance companies offering health business will now have to honour any claims related to genetic disorders. However, the impact on insurers' financial positions is likely to depend on the following factors:

Factors	Issues	Considerations
Type of conditions	Insurers will need to identify conditions that are genetic in nature and their impact on the premium rates and reserves.	The significance of the impact will depend on the benefit cover offered under the current portfolio of products.
	Insurers will also need to identify conditions where it is difficult to ascertain the cause of the condition as genetic.	Most genetic disorders are “multifactorial inheritance disorders” caused by a combination of inherited genetic mutations and environmental factors. These include heart disease, diabetes and some types of cancer.
	Researchers are also studying genetic links to other common conditions like alcoholism, obesity, mental illness and Alzheimer's disease to establish the genetic nature of these conditions.	Insurers will need to keep themselves informed about such research and regularly review the quantification of the impact in light of any new information.
Medical advances	Significant clinical development is taking place in the area of gene therapies for the treatment of rare diseases, 80% of which are genetic in nature.	These newly developed therapies are quite expensive. The impact of these developments needs to be factored in because these may increase future claims cost significantly.
Underwriting practices	Insurers will need to revise their underwriting practices to accurately assess the risks they are taking on in their books.	This may require strengthening underwriting rules and collecting more information at the proposal stage to better assess the likelihood of the prospect having a genetic disorder.
Claims management and pricing	Background of the court case suggests that the genetic disorders exclusion clause was added at a later stage. There was no such exclusion in the earlier years of the policy.	Implications of this policy change are likely to depend on any modifications made to claims management policies and pricing assumptions in the past. Insurers that did not make any modifications when the regulations changed to allow for genetic disorder exclusion are likely to see less impact on future claims costs. This is because claims related to genetic disorders will already be reflected in their pricing bases.

This policy change is likely to bring more policyholder awareness and therefore have a significant impact on claims costs of the existing and new business. Figure 1 shows how this change may affect the existing and new business.

Figure 1: Impact on existing and new business

Existing Business



*PDR - Premium deficiency reserve

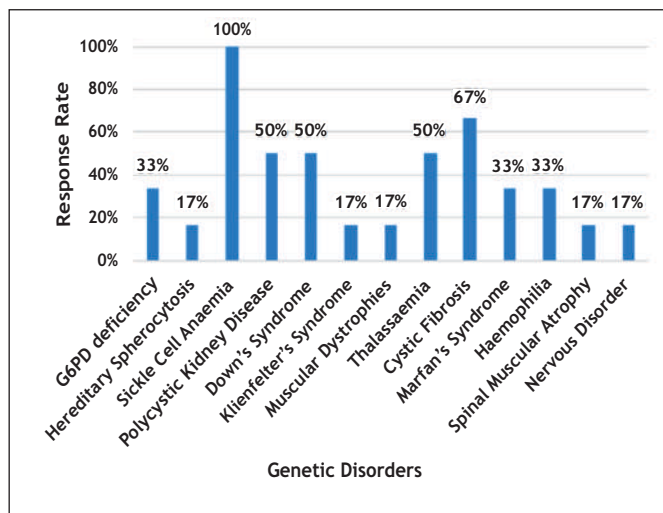
**IBNR - Incurred but not reported

New Business



on the expected claims costs included “Cystic Fibrosis”, “Polycystic Kidney Disease”, “Down’s Syndrome” and “Thalassaemia”. The graph in Figure 2 shows the response rate for the genetic disorders flagged in the survey.

Figure2: Genetic Disorders significantly affecting the expected claims costs

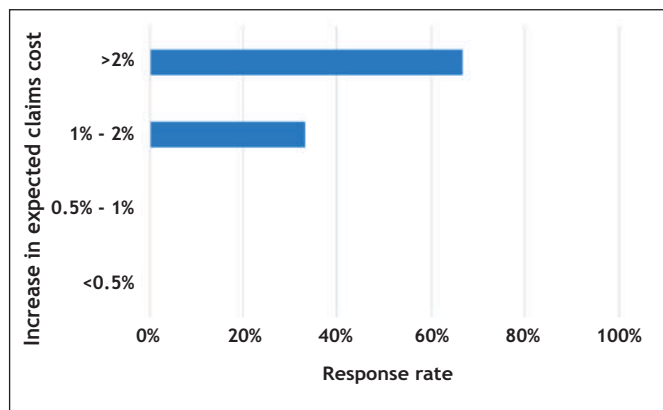


The responses reveal that congenital anomalies attributable to genetics are likely to be the top concerns for insurers.

Level of impact

The survey also asked about the level of impact this policy change would have on the expected claims costs. About two-thirds of the respondents believe that covering genetic disorders is likely to increase the expected claims cost by more than 2%, implying that this could be a major cause of concern for the insurers. The graph in Figure 3 shows the respondents' views on the anticipated level of impact on the expected claims costs based on the survey.

Figure 3: Impact of covering genetic disorders on expected claims costs



Quantification of impact

We conducted a small survey to gather the opinions of health underwriters in the industry to assess the top genetic disorders that are likely to have a significant impact on the expected claims costs and the magnitude of that impact. The results of the survey are based on six responses.

Top concerns on genetic disorders for underwriters

All respondents listed “Sickle Cell Anaemia” as one of the top genetic disorders that would have an impact on the expected claims costs. Other major genetic conditions that respondents flagged that could have some bearing

Conclusion

With this change in the regulation, insurers should regularly monitor the claims to quantify the impact of covering genetic disorder claims and build it into future pricing. Regular monitoring of claims will help insurers assess the actual experience against expected, identify key risks and develop and implement risk mitigation techniques to limit the impact of such changes. Reviewing claims denied in the past due to genetic conditions is a good starting point for the quantification of impact. A cost-benefit analysis of revising the underwriting guidelines will help achieve the right balance required between the need for the robustness of underwriting practices in terms of cost and keeping the premium rates competitive. Insurers also need to make sure that policyholders are aware of the policy benefits and exclusions, and are regularly apprised of any policy changes on renewals.

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Institute of Actuaries of India

Actuarial Common Entrance Test

ACET

DECEMBER 2018

Who is an Actuary?

An Actuary is a business professional who analyzes the financial consequences of risk. This is a niche profession with strict standards for qualifying and is also a global profession as it is recognized in most of the countries. The actuaries attract competitive salaries globally.

Who can Apply?

- Have a degree in or are studying for **Mathematical Sciences: Maths, Statistics, Econometrics** or any other
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- A **Management Graduate** or studying for it
- A **Chartered Accountant, Cost Accountant** or a **Company Secretary** or studying for any of these
- Have a degree in **Finance** or studying for it, or any other, but you have love for Mathematics and skills in Numeracy
- With minimum of **10+2** or even a maximum of a **Phd** in **Maths** or **Stats** or any other

How to Apply?

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REGISTRATIONS START

16th August 2018

REGISTRATIONS CLOSE

31st October 2018

EXAMINATION DATE

15th December 2018

DATE OF RESULT

04th January 2019

NOTE:

On successful registration you will get one sample Question Paper and Solution under your login. After passing the ACET you can take admission as student member of IAI and pursue the actuarial course. The Institute also offers the Student Support Scheme to its student members.

Contact: 022 - 62433333/3337 Email: acet@actuariesindia.org

Background

This article is a part of my efforts of expanding risk management knowledge/opportunities in India and particularly to my fellow actuarial community. Risk Management or Enterprise Risk Management (ERM) has its own music and tune and once it is known, the song and the dance are fascinating. This article throw light on actuaries' current strengthen, required risk qualification, opportunities in wider areas and required success factors.

Actuaries Traditional Strength

The traditional strength of actuaries for 100s of years have been in numbers, quantification of risks, pricing of risk, monitoring risks and using the past data, applying the present judgment and forecast for the future. This is a unique strength of actuaries not found in any other profession with quantitative mathematics.

Actuaries are trusted business partners in any organization who understand their skills, training they go through and the product that comes out. However, in India so far, actuaries have stayed in their traditional domain, so outside world are unaware about their potent skills that they possess. It is a time and opportunity now to explore the outside world which can be equally fascinating.

ERM is a very natural area where actuaries can venture out; this is a sister domain of actuarial world, extension of statistics, application of business knowledge, thinking mind and some common sense. It has its own language, so that need to be learnt.

The difference between a traditional risk management applied by the actuaries so far and ERM is that in ERM the risk management is applied across the business rather than restricted to few functions. ERM requires an integration of risk management from top of the Company at the Board level to the last employee. ERM is like a blood in the human body which if get restricted may cause attack and such financial attacks have been witnessed in the past (2008 economic crisis) and many others.

Opportunities

A natural opportunity for actuaries is in the Risk Management Function within the insurance company. This transition should be smooth as they have to use their

current knowledge of insurance and actuarial science. One of the key requirements for success in the risk management function is understanding of products and processes. So as a combination an actuarial candidate with good understanding of insurance business, its products, processes and sound actuarial knowledge should be good enough to work in the risk function. This topped up with risk management governance and understanding of Board approved policies is a good starting point. The application of ERM in wider area is covered under "Wider Field Opportunities" section.

Risk Management Qualification

As stated above, risk management have its own language; so a theoretical knowledge of risk management helps in developing necessary skills, tools, techniques, logical thinking and mindset to approach the problem etc. Such risk management knowledge is available within the actuarial course curriculum in a form of ST 9 Subject (Enterprise Risk Management) at specialist level exam.

This subject covers fundamentals of Enterprise Risk Management, Risk Governance, Risk Management Framework, Risk Management Process, risk modeling, application of risk management in areas such as market risk, credit risk, liquidity risk, operational risk etc.

This course prepares a student for application of risk management not only in insurance sector but in other financial sectors as well such as Banks, Mutual Funds, Home loan, Micro Finance etc. This is because the principles of risk management remain same, but application changes from industry to industry that require understanding of products and processes.

A qualified fellow of Institute can get an additional designation as Certified Enterprise Risk Actuary (CERA), this is a global qualification and well recognized and regarded for the people coming from the actuarial domain.

A person who is not a qualified fellow can still write and pass the ST-9 exam and take the CERA qualification later after passing all the exams.

Wider Field Opportunities

Due to the successive failure of businesses across the globe, there is greater focus on management of risk. The series of changes made to corporate governance

guidelines across the globe is a testimony of the seriousness shown by different regulatory authorities. Some of the recent changes brought up by regulatory authorities across the globe are risk-based capital provision in the banking and insurance sector. The focus of different regulatory bodies has increased on setting up of Risk Management Committees and strengthening the role of these committees in providing risk oversight. Some of the recent changes in the regulatory regime provide more opportunities for actuaries to venture out in other sectors. For example

♦ **IRDA (Insurance Regulatory and Development Authority)** issued 2016 Corporate Governance Guidelines that require a separate position for Chief Risk Officer. This necessitates setting up of risk management function in all insurance Companies. The insurance regulator is also working towards risk based capital (RBC), based on the news available on public domain, RBC to be implemented in India in insurance sector by March 2021. Further update is awaited. Risk based capital and risk management goes hand-in-hand, there is a direct positive impact on capital when risk management is applied. So once RBC is implemented, there will be more focus on ERM.

♦ **Reserve Bank of India** - Similar to the insurance regulator, Reserve Bank of India the banking regulator is also focusing on implementation of risk based capital required in the banking sector under Basel-II/III norm. Though banking sector already had relatively matured risk management framework; the RBC has further increased the application of ERM. Market, Liquidity and Credit risk area where actuaries can use their technical expertise and skills of long term projection supplemented by risk management qualification may help them expanding their domain outside insurance sector.

♦ **SEBI (Security Exchange Board of India)** - SEBI market regulator issued Corporate Governance Guidelines in 2015 where top 100 for listing companies should have risk management exercise. In 2017, SEBI further has issued a circular on risk evaluation by the Board.

♦ **Company Laws** - 2013 Company law requires having risk management assessment by the Board.

The above requirements of risk management in different areas are a pointer towards ever increasing use of risk

management in the Indian corporate world. Different cyber attacks, online fraud, big ticket banking fraud, emerging digital risk are going to increase the application of risk management in future. The next biggest risk that the world will be facing is through Cyber risk, information security and digital risk. A future successful company will be determined on these parameters because digitalization is going to transform the world in next five years.

It is a very good time for actuaries to start focusing on the operational risk and its quantification because most of the new risks are emerging from operational area. This is a one area that requires operational risk modeling, application of statistical loss distribution and causal analysis.

Additional Qualification

Operational risk is a one area that has application in all industries because this is a risk of loss resulting from inadequate failed internal processes, people, and system or external events. The application of operational risk requires understanding of its tools, techniques, language and nomenclature etc. Those actuarial individual interested in acquiring this specialized qualification, there is a separate body that impart certification in operational risk. **The Institute of Operational Risk** in UK is one such body that imparts **“Certificate in Operational Risk Management” (CORM)**.

This additional operational risk qualification together with actuarial knowledge/qualification provides more leverage to actuarial community compared to any other professionals. The types of risk management application in future likely to arise, operational risk provide an excellent opportunities to venture out in wider domain.

Summary

In summary actuaries have understanding of financial sense of future, business acumen, skills to work with numbers, quantify risks etc; this together with ERM qualification makes them a perfect candidate to venture out in risk management domain in wider field. The additional operational risk qualification can make them apply their skills in much wider areas. ERM is a newer field not only in India but also at a global level; such educational combination can make them successful. So they may start using ST-9 subject more potently.

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Analysis of Attrition Rate and Impact on Actuarial Valuation

Assumptions are an integral part of performing actuarial valuations. Setting up actuarial assumptions involves reasonableness and acceptability is of prime importance. The Actuary's responsibility does not end with assisting company management and auditors in setting up of assumptions but also revolves around performing regular review of the appropriateness of the said assumptions by conducting a detailed analysis of Actuarial Gains and Losses.

As is true of some of the other assumptions, such as death, disability, and salary increases, the level of attrition experienced in the past is not known unless a study is made. Attrition experienced in the past can be affected for the future by many influences, so the study results should be altered as the result of other knowledge about factors expected to influence the employee group.

This study is based on a large body of company statistics and specific investigations have been deployed to derive such standard attrition rates.

Types of Significant Assumptions

While performing actuarial valuations of employee benefits, various financial and demographic assumptions are used. Some of the significant assumptions that impact the benefit costs are:

- ♦ **Salary escalation rate:** Salary escalation rate is the rate at which the salary increases. As most post-employment benefits are paid based on (Basic + DA) salary, the escalation rate should be considered on (Basic + DA) salary.
- ♦ **Mortality:** Mortality rate is the death rate during a particular period of time. It is dependent on the age of an employee. At present Indian Assured Lives Mortality (2006-08) Ultimate tables are used for the purpose of actuarial valuations in India.
- ♦ **Discount rate:** Discount rate is the rate used to determine the present value of future payouts. The

discount rate should be determined with reference to market yields on government bonds or high quality corporate bonds as on the balance sheet date for relevant term and currency, as required as per the accounting standard on employee benefits as applicable.

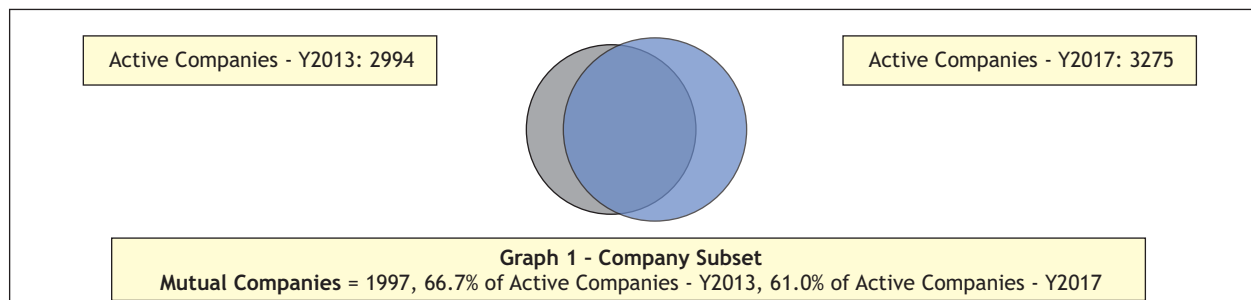
- ♦ **Attrition rate:** Attrition rate represents the employee withdrawal other than on account of retirement and death. Usually entities provide a flat rate of attrition but it has been observed that attrition rate is dependent on the service or age of the employee. For example, the entity can use x% for service below 5 years, and y% for above 5 years instead of a flat rate of z%.

Why would we conduct an analysis for Attrition rates?

The purpose of this paper is to describe the basic level of attrition rate using the industry, size of a company, age and service classification as a guide. Although attrition rate is only one of the several actuarial assumptions that must be selected, it is an important one in terms of the effect it has on employee benefit costs. Attrition rate is significant in deciding the future expected cash flows and has a direct impact on obligation. Attrition assumption is the most difficult assumption as it dependent upon the age and service slab, sex, geography, industry and the pay scale of a particular employee. Thus the choice of the appropriate level of overall attrition is of decisive importance.

Data Collation:

For trend analysis of attrition rate, employee data investigation was performed over the last 4 years. The data was gathered from March 2013 to March 2017. The companies active as on F.Y. 2013 were 2994 which subsequently increased to 3275 companies in F.Y. 2017. For the purpose of this investigation, we have used the data of 1997 common companies (i.e. Companies active from F.Y. 2013-17).



*Mutual companies refers to the companies which were active from F.Y. 2013-17.

Mutual companies are further grouped into three categories based on employee strength, viz. "Small Company", "Medium Company", and "Big Company".

Company Distribution - Small, Medium and Big



Graph 2 - Sample Distribution - Company Size
Category based on Employee Count as at 31-03-2013

Small Companies: [0,500]

Medium Size Companies: [501, 5000]

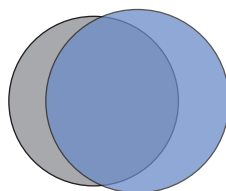
Big Size Companies: 5001 and above

Methodology:

For the analysis of employee attrition rate, we have made use of employee data set compiled for the purpose of gratuity valuations over the analysis period. From 2010 onwards we started our own SQL based software for employee benefit valuations with the primary objective to perform qualitative and quantitative work while honing our ability to handle a large set of employee specific data. Valuation software is available to store/reuse uploaded data which is kept in a highly secure dedicated server for each of the valuation date.

As at 31-03-2013, active employee data available for gratuity valuation was approximately 2.2 million for 2994 companies. Out of 2994 there were 1997 companies which stayed over end-to-end valuation period with employee count of 1.6 million.

Active Employees - Y2013: 2209k



Active Employees - Y2017: 2754k

Graph 3 - Employee Count Distribution
Active Employees from Common Companies =

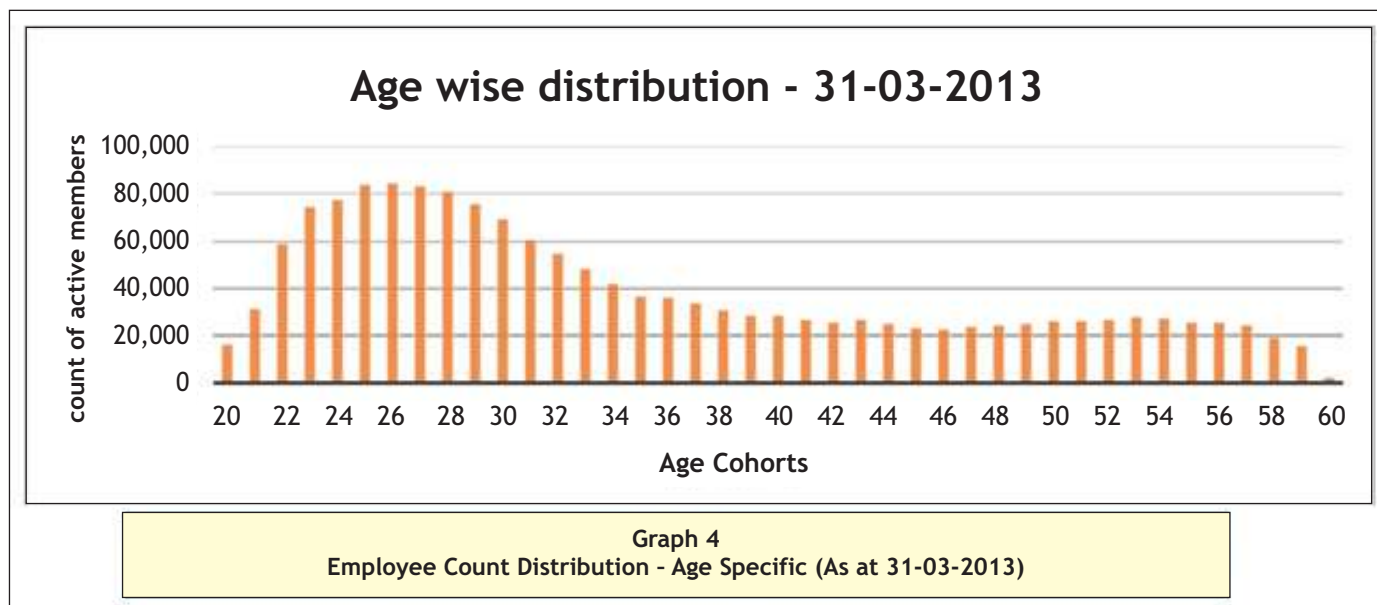
1608k, 72.8% of Active Employees - Year2013, 58.4% of Active Employees - Year2017

For the purpose of analysis, we extracted the employee ID, date of birth, date of joining and normal retirement age for each company/employee at each valuation date of 31-03-2013, 31-03-2014, 31-03-2015, 31-03-2016 and 31-03-2017. However for the analysis of employee withdrawal a select period of [4] years from March 2013 is used to arrive p.a. attrition rate.

Employee Distribution as at 31-03-2013

At each valuation date, age and service of individual employee is calculated to lower absolute value integer. In respect of employees who were active for companies which are selected for analysis as at 31-03-2013, we summarized 1.6 million employee data as follows:

- ♦ Age
- ♦ Service
- ♦ Normal Retirement Age
- ♦ Industry Type



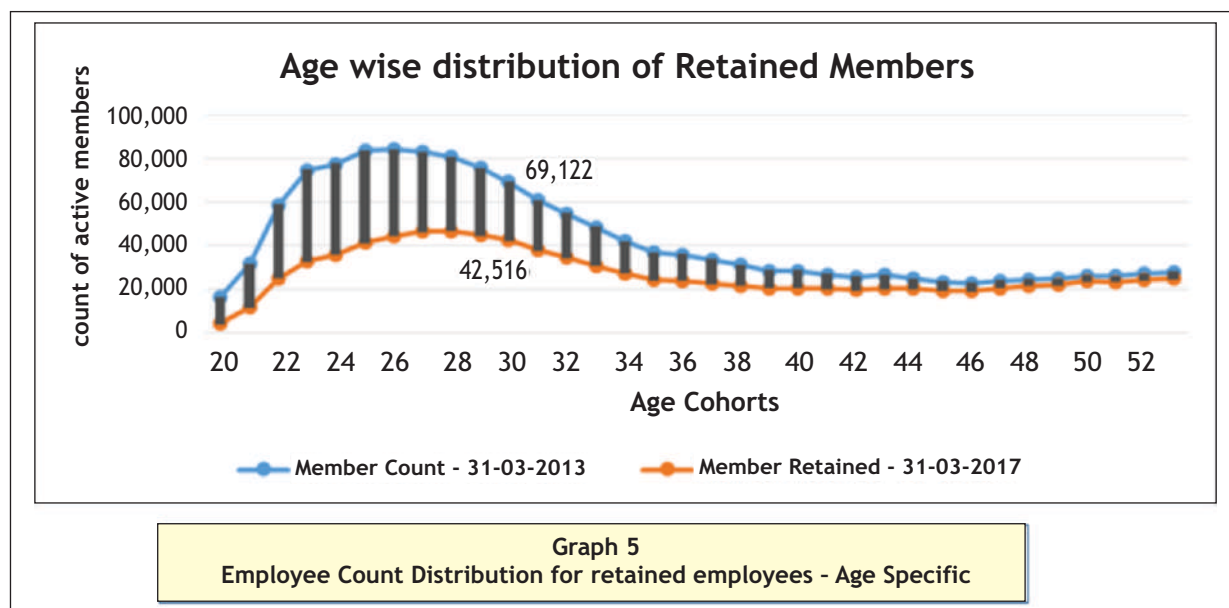
The Table below summarises the common employees as at 31-03-2013 for companies which are selected for analysis. This was further used to check how attrition rate varies among various industries.

Table 1 Employee Count Distribution - Industry Specific (As at 31-03-2013)	
Industry	Member Count
Banking	314,800
Hardware / Software & IT Consulting, Products & Services	253,937
Energy & Resources	117,336
Pharmaceutical / Healthcare / Skincare / Hygiene Products & Services	94,680
Manufacturing - Other	92,848
Outplacement Services / BPO / KPO	84,883
Financial Services	83,386
Services - Other	53,622
Supply Chain Management	36,711
Apparel / Accessories / Textiles	31,133
Manufacturing - Chemical Elements & Allied Products	29,293
Conglomerate	27,353
Insurance	27,159
Airlines, Aviation Services / Supplies	26,294
Hospitality	25,376
Safety & Security, Investigative Services & Products	22,447
Manufacturing - Automotive	19,339
Infrastructure	18,758
Manufacturing - Industrial	18,287
Steel	17,528
Food & Beverage Manufacturing / Distribution / Services	16,432
Architectural, Designing, Engineering & Technical	14,500
Printing & Publishing	12,705
Manufacturing - Electronics	10,984

Industry	Member Count
Hospitals	10,523
Property Development / Real Estate Services	10,320
Retail Consumer Products	9,834
Electronics	9,638
Education	9,312
Business Advisory, Solutions & Consultancy Services	8,653
Broadcasting / Media & Entertainment / News	8,032
Gems & Jewelleries	7,754
Sourcing, Dealing, Buying & Supplying	7,668
Manufacturing - Consumer	7,221
Advertising, Marketing & Public Relations	6,561
Testing & Inspection	5,580
Glass	5,388
Agriculture Products & Services	5,237
Construction & Building Systems / Materials / Fixtures	5,013
Packaging	4,732
Export / Import	4,476
Mining	4,171
Telecommunications	3,899
Research Analysis & Development	3,584
Transportation	2,832
Broadband / Cable Networks & Services	2,658
Online Services	2,420
Scientific & Medical Instruments	2,347
Environmental Products & Services	2,152
Farm & Industrial Equipment	1,986
Associations and Non-Profit Organizations	1,956
Government	1,455
Travel & Tourism	960
Biotechnology	872
Ship Management / Marine Services	599
Sports, Athletic, Recreational, and Social Activities	400
Animals & Animal Products	270
Arts / Handicrafts / Antiques / Curios	194
Grand Total	1,608,488

Collated information of employees which were active as at 31-03-2013 were compared with active employees as at 31-03-2017. This was done by making an Age - Service matrix, which is based on survival status and time-to-time information available for exits.

The graph below shows members beginning at as 31-03-2013 and members retained at 31-03-2017. The area between the two curves represent the employees who have left.



It can be perceived from the above data point on the graph that the population size was 69,122 for employees aged 30 as at 31-03-2013 which reduced to 42,516 as at 31-03-2017. This observation shows that around 26,606 employees have

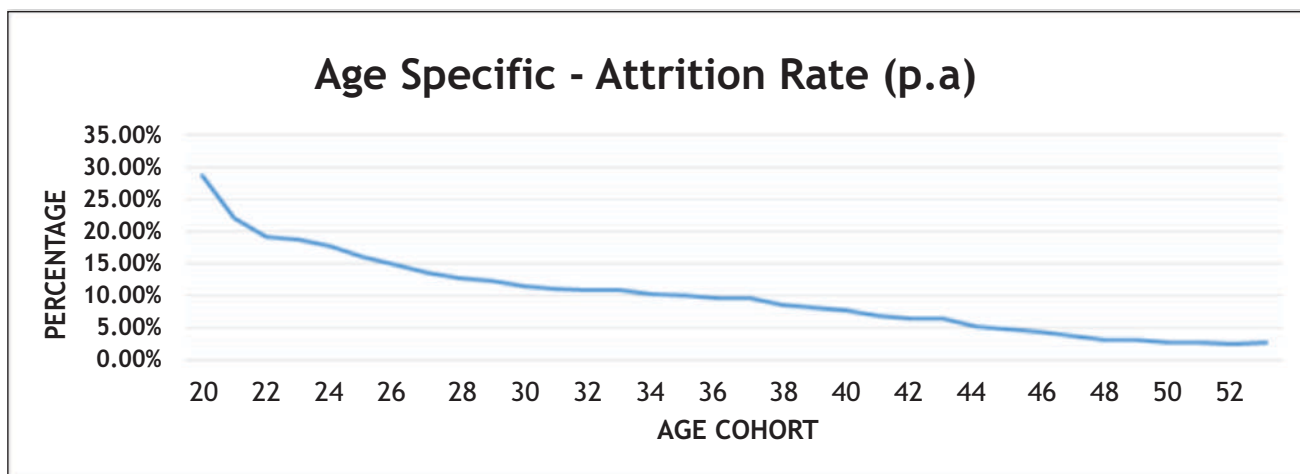
left during the 4 year time period. Hence, the attrition rate for age 30 is 38.49% over 4 years, which comes to 11.44% p.a.

As the select period for the analysis of attrition trend is 4 years, we have restricted the sample for retained employees as at 31-03-2013 at age 53.

Results:-

Results for per annum attrition rate were analyzed as follows:

a) Attrition Rate - Age Specific



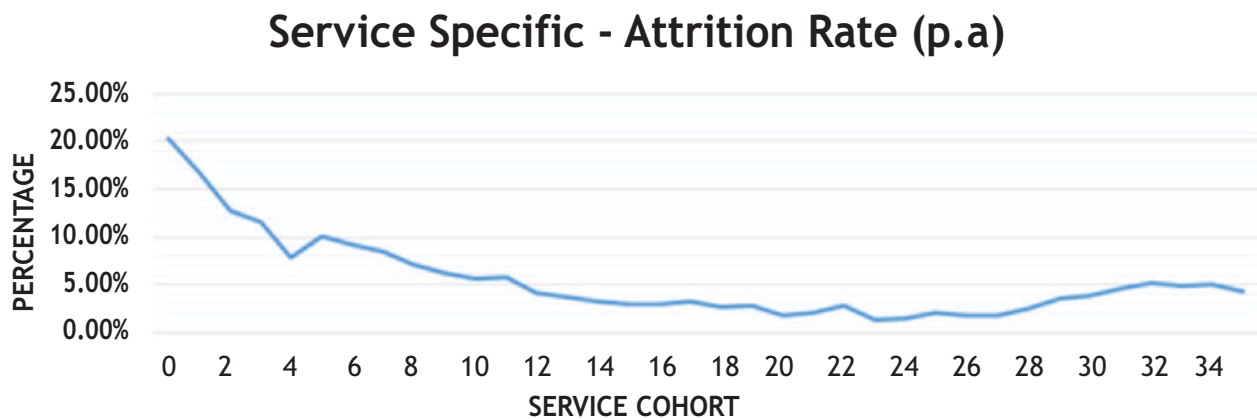
Graph 6
Attrition Rate - Age Specific

Table 2
Attrition Rate (p.a.) - Age Specific

Age (years)	Attrition Rate (p.a.)	Age (years)	Attrition Rate (p.a.)
20	28.69%	37	9.54%
21	22.11%	38	8.54%
22	19.21%	39	8.09%
23	18.65%	40	7.68%
24	17.59%	41	6.79%
25	16.06%	42	6.44%
26	14.77%	43	6.43%
27	13.56%	44	5.16%
28	12.77%	45	4.68%
29	12.32%	46	4.37%
30	11.44%	47	3.74%
31	11.05%	48	3.14%
32	10.81%	49	3.00%
33	10.75%	50	2.63%
34	10.15%	51	2.63%
35	9.88%	52	2.43%
36	9.47%	53	2.77%

We can observe a trend that the younger employees are now working for the same company for a shorter duration than in the past. Attrition assumption tends to be higher at the younger ages and falls as the employee gets older. The graph reflects a small up-turn at the older ages as some employees opt for early retirement.

b) Attrition Rate - Service Specific



Graph 7
Attrition Rate - Service Specific

Table 3
Attrition Rate (p.a.) - Service Specific

Service (years)	Attrition Rate (p.a.)	Service (years)	Attrition Rate (p.a.)
0	20.37%	18	2.71%
1	16.82%	19	2.73%
2	12.81%	20	1.70%
3	11.62%	21	2.10%
4	7.90%	22	2.77%
5	10.12%	23	1.31%
6	9.13%	24	1.41%
7	8.42%	25	2.05%
8	7.16%	26	1.83%
9	6.29%	27	1.76%
10	5.66%	28	2.56%
11	5.73%	29	3.48%
12	4.19%	30	3.83%
13	3.66%	31	4.58%
14	3.23%	32	5.14%
15	2.90%	33	4.88%
16	2.98%	34	5.01%
17	3.31%	35	4.25%

Graph 7 shows the correlation between attrition rates and years rendered in service. The graph reflects higher attrition for employees with lower service and conversely the attrition decreases as the service of an employee increases. Appreciation at work, job security, opportunity for advancement are few of the main reason why a lower attrition rate is reflected at the higher service range. However, a steady increase in attrition is reflected after 28 years of service as an employee tends to leave the organizations on account of retirement.

c) Attrition Rate - Industry Specific

Table 4
Attrition Rate (p.a.) - Industry Specific

Industry	Attrition Rate (p.a.)
Outplacement Services / BPO / KPO	34.24%
Safety & Security, Investigative Services & Products	33.95%
Online Services	22.84%
Telecommunications	22.45%
Property Development / Real Estate Services	22.26%
Insurance	21.00%
Hospitality	20.82%
Apparel / Accessories / Textiles	20.38%
Environmental Products & Services	19.84%
Infrastructure	19.10%
Manufacturing - Electronics	18.50%
Advertising, Marketing & Public Relations	17.57%
Export / Import	17.48%
Scientific & Medical Instruments	17.27%
Business Advisory, Solutions & Consultancy Services	17.21%
Gems & Jewellerys	17.21%
Biotechnology	16.78%
Retail Consumer Products	16.64%
Broadcasting / Media & Entertainment / News	16.27%
Financial Services	15.91%
Manufacturing - Other	15.58%
Travel & Tourism	15.25%
Broadband / Cable Networks & Services	15.21%
Education	15.20%
Construction & Building Systems / Materials / Fixtures	15.19%
Sourcing, Dealing, Buying & Supplying	15.15%
Electronics	14.82%
Architectural, Designing, Engineering & Technical	14.43%
Pharmaceutical / Healthcare / Skincare / Hygiene Products & Services	14.02%
Testing & Inspection	13.44%
Farm & Industrial Equipment	12.34%
Supply Chain Management	12.27%
Hospitals	12.20%
Packaging	12.16%
Manufacturing - Industrial	11.05%
Services - Other	10.87%
Transportation	10.34%
Hardware / Software & IT Consulting, Products & Services	10.30%
Conglomerate	10.15%
Food & Beverage Manufacturing / Distribution / Services	9.96%
Ship Management / Marine Services	8.77%
Steel	8.18%
Associations and Non-Profit Organizations	7.77%
Agriculture Products & Services	7.76%
Printing & Publishing	7.67%
Glass	7.40%
Manufacturing - Automotive	7.37%
Research Analysis & Development	7.15%
Manufacturing - Chemical Elements & Allied Products	7.04%
Sports, Athletic, Recreational, and Social Activities	6.33%
Manufacturing - Consumer	4.59%
Mining	3.58%
Government	3.52%
Energy & Resources	3.31%
Animals & Animal Products	3.27%
Airlines, Aviation Services / Supplies	2.86%
Arts / Handicrafts / Antiques / Curios	2.79%
Banking	2.65%

Table 4 gives industry specific bifurcation of attrition rate. The highest attrition rate is observed in Outplacement Services / BPO / KPO whereas the lowest attrition rate was in Banking of 2.65% p.a.

Table 5
Attrition Rate (p.a.)

Range	Table 3 (a) Attrition Rate (p.a.)	Range	Table 3 (b) Attrition Rate (p.a.)
Age Range 1 - [20,30]	15.46%	Service Range 1 - [0,1]	18.84%
Age Range 2 - [31,40]	9.85%	Service Range 2 - [2,4]	11.16%
Age Range 3 - [41,50]	4.63%	Service Range 3 - [5,10]	8.68%
Age Range 4 - [51, and above]	2.61%	Service Range 4 - [11,20]	3.24%
		Service Range 5 - [21, and above]	2.37%

The Attrition rates tabulated above are further analysed for various sectors, which are tabulated as below:

Table 5 (a)
Sector - Steel & Manufacturing

Range	Attrition Rate (p.a.)	Range	Attrition Rate (p.a.)
Age Range 1 - [20,30]	17.04%	Service Range 1 - [0,1]	20.04%
Age Range 2 - [31,40]	10.38%	Service Range 2 - [2,4]	12.63%
Age Range 3 - [41,50]	6.99%	Service Range 3 - [5,10]	8.94%
Age Range 4 - [51, and above]	7.97%	Service Range 4 - [11,20]	4.22%
		Service Range 5 - [21, and above]	4.37%

Table 5 (b)
Sector - Pharmaceutical

Range	Attrition Rate (p.a.)	Range	Attrition Rate (p.a.)
Age Range 1 - [20,30]	19.00%	Service Range 1 - [0,1]	21.23%
Age Range 2 - [31,40]	10.44%	Service Range 2 - [2,4]	13.92%
Age Range 3 - [41,50]	5.88%	Service Range 3 - [5,10]	7.87%
Age Range 4 - [51, and above]	5.33%	Service Range 4 - [11,20]	4.61%
		Service Range 5 - [21, and above]	3.29%

Table 5 (c)
Sector - BPO/KPO/SCM

Range	Attrition Rate (p.a.)	Range	Attrition Rate (p.a.)
Age Range 1 - [20,30]	30.49%	Service Range 1 - [0,1]	33.65%
Age Range 2 - [31,40]	18.01%	Service Range 2 - [2,4]	21.39%
Age Range 3 - [41,50]	13.03%	Service Range 3 - [5,10]	11.55%
Age Range 4 - [51, and above]	11.88%	Service Range 4 - [11,20]	6.51%
		Service Range 5 - [21, and above]	3.79%

Table 5 (d)
Sector - Hardware / Software & IT Consulting, Products & Services

Range	Attrition Rate (p.a.)	Range	Attrition Rate (p.a.)
Age Range 1 - [20,30]	11.80%	Service Range 1 - [0,1]	11.62%
Age Range 2 - [31,40]	6.95%	Service Range 2 - [2,4]	11.18%
Age Range 3 - [41,50]	3.54%	Service Range 3 - [5,10]	7.70%
Age Range 4 - [51, and above]	2.48%	Service Range 4 - [11,20]	4.82%
		Service Range 5 - [21, and above]	2.51%

Table 5 (e)
Sector - Banking

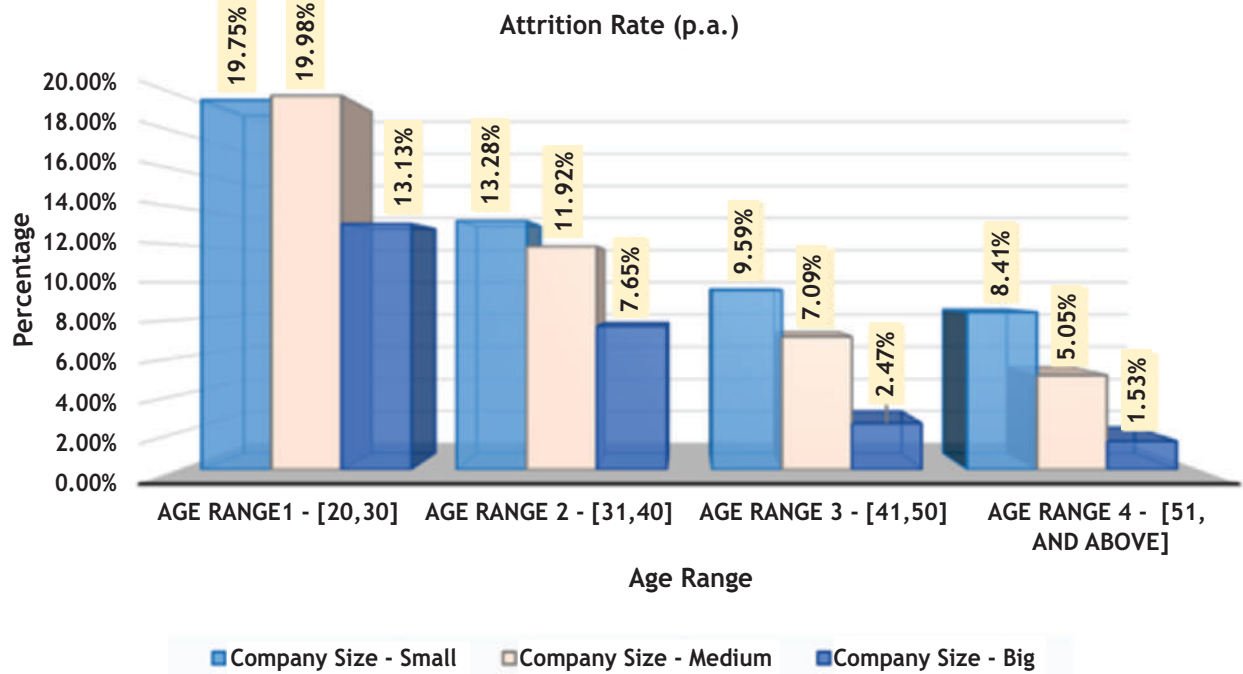
Range	Attrition Rate (p.a.)	Range	Attrition Rate (p.a.)
Age Range 1 - [20,30]	3.08%	Service Range 1 - [0,1]	5.21%
Age Range 2 - [31,40]	1.91%	Service Range 2 - [2,4]	1.81%
Age Range 3 - [41,50]	1.23%	Service Range 3 - [5,10]	1.45%
Age Range 4 - [51, and above]	1.32%	Service Range 4 - [11,20]	1.44%
		Service Range 5 - [21, and above]	1.27%

Table 5 (f)
Sector - Services

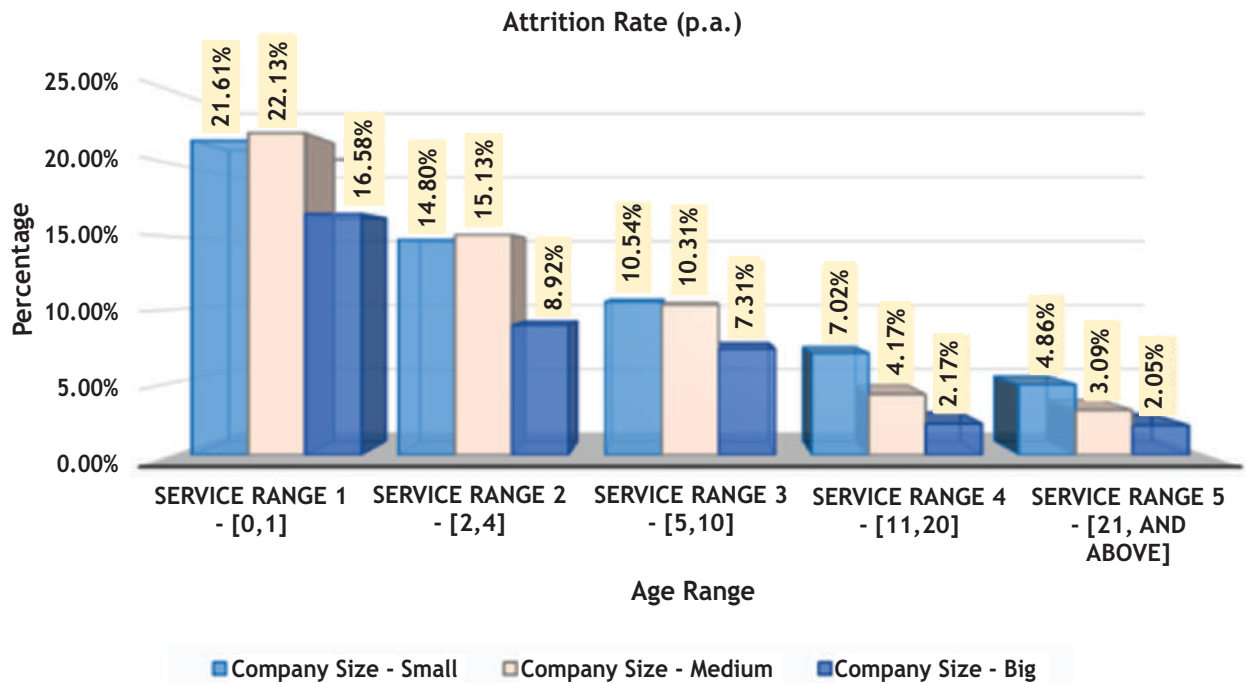
Range	Attrition Rate (p.a.)	Range	Attrition Rate (p.a.)
Age Range 1 - [20,30]	19.96%	Service Range 1 - [0,1]	23.36%
Age Range 2 - [31,40]	13.35%	Service Range 2 - [2,4]	15.93%
Age Range 3 - [41,50]	5.95%	Service Range 3 - [5,10]	10.59%
Age Range 4 - [51, and above]	2.40%	Service Range 4 - [11,20]	3.76%
		Service Range 5 - [21, and above]	2.37%

It can be observed from the above age and service range that attrition rates are specifically higher when the service and age of an employee is below 5 and 30 years respectively. Hence, it is recommended to use a staggered attrition rate when required, would project the liability more appropriately.

d) Attrition Rate - Company Size



Graph 8
Attrition Rate - Age and Company size Specific



Graph 9
Attrition Rate - Service and Company size Specific

Impact of Attrition Rate on the Projected Benefit Obligation

Accounting by an enterprise for defined benefit plans involves:-

- Using of actuarial techniques to make a reliable estimate of the amount of benefit that employees have earned in return for their service in the current and prior periods. This requires an enterprise to determine how much benefit is attributable to the current and prior periods and to make estimates (actuarial assumptions) about demographic variables and financial variables that will influence the cost of the benefit
- Discounting that benefit using the Projected Unit Credit Method in order to determine the present value of the defined benefit obligation and the current service cost.

Consider an enterprise is offering a gratuity benefit to its employees. For provisioning of obligation, an enterprise will have to make a provision of gratuity, calculation of which is illustrated as below

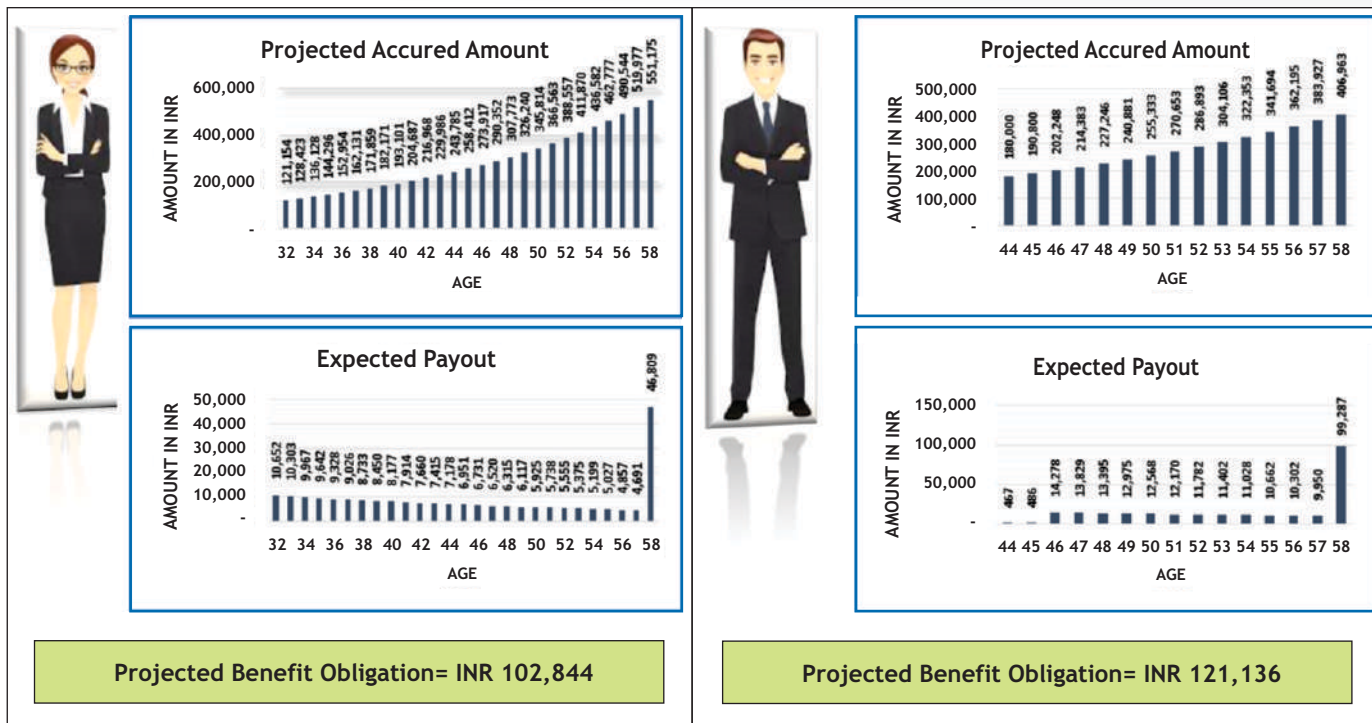
	Illustration 1 - Age : 32 years - Service : 7 years - Retirement Age : 58 years - Monthly Salary : INR 30,000 - Vesting Period* : 5 years - Benefit Scheme : Gratuity 15 days salary for each year of service with a limit of INR 2,000,000/-. Benefit is payable on death or on resignation or on retirement. Accrued Amount $= 15/26 \times 7 \times 30,000$ $= \text{INR } 121,154$ *Applicable on retirement or on resignation
	Illustration 2 - Age : 44 years - Service : 3 years - Retirement Age : 58 years - Monthly Salary : INR 78,000 - Vesting Period* : 5 years - Benefit Scheme : Gratuity 20 days salary for each year of service. Benefit is payable on death or on resignation or on retirement. Accrued Amount $= 20/26 \times 3 \times 78,000$ $= \text{INR } 180,000$ *Applicable on retirement or on resignation

The ultimate cost of a defined benefit plan may be influenced by many variables, such as final salaries, employee attrition rate and mortality. The ultimate cost of the plan is uncertain and this uncertainty is likely to persist over a long period of time. In order to measure the present value of the post-employment benefit obligations, it is necessary to:

- apply an actuarial valuation method;
- attribute benefit to periods of service; and
- make actuarial assumptions

Financial Assumptions	Demographic Assumption
Discount Rate : 8.00% p.a. Salary Escalation Rate : 6.00% p.a.	Mortality Rate : IALM 2006-08 Attrition Rate : Service Linked*
	*as mentioned in table 3 (b)

An enterprise should use the Projected Unit Credit Method to determine the present value of its defined benefit obligations and the related current service cost and, where applicable, past service cost. The Projected Unit Credit Method (sometimes known as the accrued benefit method pro-rated on service or as the benefit/years of service method) considers each period of service as giving rise to an additional unit of benefit entitlement and measures each unit separately to build up the final obligation.



For calculation of **Projected Benefit Obligation**

- Accrued amount** calculated as at effective date is **projected** till last age of exit i.e. till normal retirement age, using 6.00% p.a. salary escalation rate.
- Decrement adjusted **expected payout** at each age is calculated by multiplying mortality, attrition rate and/or survival chance with projected accrued amount.
- Projected benefit obligation** is then calculated by summing discounted value of each year expected payout using discount rate of 8.00% p.a.

For calculation of expected payout it is assumed that death or withdrawal of an employee will happen at the start of each year.

From Illustration 2, we can clearly see that the expected payout for the first two years is low as the member has not vested the benefit and so the expected payout is only due to the eventuality of death. Increase in expected payout from 3rd year onwards is predominately due to expected payout on account of attrition, as the member may vest the benefit by that age. Increase in attrition rate for non-vested beneficiaries will decrease projected benefit obligation due to less possibility of getting the benefit.

Delta in Projected Benefit Obligation (in %)	Illustration 1	Illustration 2
Discount Rate + 1.00% with rest all assumptions unchanged	-7.06%	-7.33%
Discount Rate - 1.00% with rest all assumptions unchanged	8.20%	8.18%
Salary Escalation Rate +1.00% with rest all assumptions unchanged	8.29%	8.26%
Salary Escalation Rate -1.00% with rest all assumptions unchanged	-7.25%	-7.53%
Attrition Rate + 1.00% with rest all assumptions unchanged	1.45%	-1.53%
Attrition Rate - 1.00% with rest all assumptions unchanged	-1.65%	1.47%

Table 6
Impact on Projected Obligation due to Change in valuation Assumptions

Conclusion

The selection of actuarial assumptions is critical for determining employee benefit liabilities as in turn it determines the company's expense. Choice of appropriate assumptions will help in minimizing volatility in the expenses and liability.

Accounting standard on employee benefits prescribes management's responsibility to set assumptions, but it is the onus of the auditor to express an opinion on annual accounts which should reflect a true and fair view. Therefore they also play a major role in setting assumptions. We therefore recommend that a discussion between the Company (Finance and HR representatives), the Actuary and the Auditor should occur at an early stage in the valuation process. This ensures all stakeholders are in agreement in this key area.

It should be remembered that since the assumptions are long term in nature (other than discount rate which is driven by market yields); we would not expect significant changes in the assumptions year on year. Change should only occur where previous assumptions are not reflecting experience or there has been a change in the management's perception for company's future plans.

In setting the assumption for attrition rate, one must take care that the past may not be always a guide to the future. Even if the past experience can be statistically analyzed to produce some meaningful rates, the future experience of withdrawals will depend on general economic conditions as also the particular conditions affecting the given employer's business. Furthermore, withdrawal rates differ significantly from scheme to scheme and within a scheme from year to year.

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the fellow members (above 60) whose
Birthday fall in September 2018**

Ms. Asha J Joshi
Mr. Dewi Edryd James
Mr. G N Agarwal
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