Institute of Actuaries of India
www.actuariesindia.org

the Actuary INDIA

THE MAGAZINE OF THE INSTITUTE OF ACTUARIES OF INDIA

Feb22- Mar22 Issue
Vol. XIV - Issue 2-3
Pages 26• ₹20

INDIAN ACTUARIAL PROFESSION
Serving the Cause of Public Interest

Mega Online Event

Virtual Actuarial Conclave (VAC 2022)

Decoding Disruption

10th - 12th February, 2022

GLOBAL RISK CONSULTANTS

Global Risk Consultants (GRC) is an Actuarial Consulting Partnership Firm established in India in 2015. Since its incorporation, GRC has had impressive growth whilst maintaining uncompromising quality standards. With its clients spread across Asia, Middle East, Africa & Europe; GRC has been offering consulting services in the areas of Life, Non-Life, Health, Re-insurance, Employee and Other Benefits.

GLIMPSE OF OUR SERVICE OFFERINGS:

INSURANCE RELATED COVERING:

Regulatory Reporting/Appointed Actuary Services:
Valuation of policyholder liabilities, preparation of regulatory & financial condition reports, claims adequacy assessment, peer review, scenario & stress testing, re-insurance adequacy & sufficiency assessment, retro-cession arrangement & risk retention analysis, claims experience analysis.

Implementation of IFRS 17:
Gap analysis, financial impact assessment, implementation planning, implementation & dry run, support services covering actuarial, accounting, IT & finance, capital modelling and business strategy.

Actuarial Services as part of Insurance Audit under International Standard on Auditing (ISA 620): Valuation of Policyholder Liabilities.

Product Designing and pricing:
Product design in compliance with the Regulatory Requirements, Target market and market benchmark, building robust Pricing Models, Regulatory Filing and Reporting, Experience monitoring and management, Premium Adequacy Assessment, Re-pricing of existing products to meet underlying Regulatory Compliance.

Capital Management and Business Strategy:
Projection of capital requirements, assessment of economic capital/risk based capital, impact analysis of new products on capital requirement, solvency assessment and risk management.

Merger/Acquisition/New entrants:
Assessment of fair value of business, Actuarial due diligence, Financial due diligence, Commercial due diligence, Assisting in discussion with the buyer/seller, Feasibility and Viability studies.

PENSION & EMPLOYEE BENEFITS COVERING:

Compliance Reporting:
Certified reports as per IAS 19 (Revised 2011) & US GAAP (ASC 715), Due diligence and consulting on accounting framework, merger, acquisitions, and takeovers, accounting for cost of benefits.

Benefit design & Review:
Determine the cost impact of introduction of new plans and benefits, benchmark existing Defined benefit (DB) plans with the general market, Scheme design and alteration from Defined Benefit to Defined Contribution conversion, analysis of cost v/s benefit.

Other Benefit Services:
Actuarial valuations for assessing funding level, derive contribution rates of funded plans for adequacy and better financial management and financial planning, advice cost implications of changes in policy from an HR & compliance perspective.

Actuarial valuation for Defined Benefit Plans like;
Gratuity, Leave Encashment, Long Service Award, Long Term Incentives, Employee Stock Ownership Plans (ESOP), Corporate Defined Benefit and State Sponsored Pension Plans.

WE ARE REACHABLE AT

503, 5th Floor, Madhava Building, Bandra Kurla Complex, Bandra (E), Mumbai - 400051, India
Tel.: +91 22 6695 3245 / + 91 22 6236 9034
Email: grc@globalriskconsultants.in
Website: www.globalriskconsultants.in

the Actuary INDIA
www.actuariesindia.org

CONTENTS

"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"

Printed and Published monthly by Vinod Kumar Kuttierath, Deputy Director - Member & Education services, Training and Placement, 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

For circulation to members, connected individuals and organizations only.

From Chief Editor's Desk

Ms. Bhavna Verma

"If you think you learn a lot by reading, try writing." As I write my last editorial, after over 3 years since the first, I would have to agree. I would therefore also encourage everyone to contribute actively to the magazine and upgrade their learning in the process! You will soon see a new avatar of the Actuary India magazine on the digital platform.

I extend a warm welcome to the new Chairman of the Insurance Regulatory and Development Authority of India (IRDAI), Mr. Debashish Panda. There has been encouraging news this week regarding the regulator's intent to provide more flexibility to insurers in product design and management by easing compliance burden and to shift focus to principle based regulation rather than rule based. These are progressive moves which should benefit the industry, privatized for around 22 years now. The regulator also shared deliberations regarding allowing micro insurers with limited capital requirement to deepen insurance penetration. As per reports, Coronavirus reportedly enhanced insurance penetration in India close to the global average; to 3.2% in 2020 from 2.82% in 2019. Facilitating data analytics also featured as one of the focus areas.

On the subject of data, it increasingly appears to me that with constant data enrichment, it will become imperative for actuaries to rely on data science techniques and skills to make effective contribution to businesses in a competitive market and evolving external environment. Ultimately, the two will need to converge or atleast closely cooperate and I see necessary place for data science in all actuarial teams.

With this final message, I sign off! It has been my privilege to have served as Chief Editor of the Actuary India magazine and a pleasure to interact with fraternity members though this medium.

Do continue to write in with your thoughts and suggestions at library@actuariesindia.org.

From President's Desk

Mr. Subhendu Bal

"The transformation literally means going beyond your form"- Quote by Wayne Dyer

I am quite excited to write this column and happy to share that the transformation to Actuary India 2.0 will be published on a digital platform, starting from the next edition, April 2022. This transformation is going to be a milestone in the history of the profession, which will also make complete sense of the above quote. I will share salient features and specialties of the digital format in my next column.

The VAC 2022 conducted for the second consecutive time on the virtual platform was a thundering success by way of its participation, diversified topics of discussion, expert speakers from across the globe, partnerships, networking opportunities, and games. There were more than 3000 registrations, 71 speakers from India and different parts of the world including countries like the USA, UK, South Africa, and Australia. I am very happy and thankful to all 34 partners of the grand event for their continued trust and co-operation to make this a big success. Lots of encouraging and delightful comments and feedback poured in from satisfied participants, which also shows the extent of their involvement and enthusiasm. Participants largely benefited from their exposure to diversified subjects and expert speakers across the globe. I take this opportunity to express my sincere appreciation and gratitude to both our chief guests for the event, viz., Shri Supratim Bandyopadhyay, Chairperson, PFRDA & Ms. Roseanne Harris, President, International Actuarial Association. Coverages and reportages of the event will follow in detail with our next Actuary India edition.

I was overwhelmed to express my gratitude to the Government of India for their letter of best wishes for our flagship event of VAC 2022. The one received from none other than the Hon'ble Prime Minister, Shri Narendra Modiji for the success of the event and the other one from the Hon'ble Minister of Finance & Corporate Affairs, Smt. Nirmala Sitharaman Ji.

The Prime Minister's letter of best wishes mention "The 75 year of independence is an auspicious, stirring occasion. May the Amrit period of the next 25 years inspire Institutions and Individuals to contribute towards the building of a new, glorious and self-reliant India. I am sure that VAC 2022 will provide an ideal platform for the gathering of students, academics, and professionals to hold stimulating deliberations on a wide spectrum of issues. May the discussions be fruitful. Best wishes for all success of VAC 2022".

The Finance Minister congratulated us as "Congratulations to the Institute of Actuaries of India for organizing the second Virtual Actuarial Conclave (VAC 2022). The theme of the conclave -Preparing for a New Era- Decoding Disruption is very pertinent for the present times". Hon'ble Minister also appreciated the contributions made by the actuarial community in solving complex financial problems, managing uncertainties and risks, developing insurance sector & growing economy. She has expressed the hope that the actuarial profession will continue to strive & make every endeavour to help and grow various sectors of the economy and contribute to building a financially secure society.

Looking back to the year 2021-22, I am very happy to share with you all that we have touched the milestone of 500 fellow members for the first time along with more than 210 associate members, who are on the way to their fellowship. This also indicates the future trend of a number of fully qualified members in the years to come.

To address the concern of unemployment for actuarial students, a placement cell have been created within the Institute to connect with each of the student members and to provide guidance and support for their onboarding for their job, based on their expertise and competency. It is to be emphasized here that, for any actuarial job, only the number of subjects is not the criteria but understanding and knowledge of various software and other skills are also considered as important criteria by employers. So, we at the Institute's level conducted many job-oriented training programs during the year, particularly in R, Python, IFRS 17 and Machin learning and want to continue to conduct more to fill any such technical gap in order to make IAI members skill-oriented, competent and employable. There are many more high learning training programs lined up in the coming months. I urge all our members, particularly student members to utilize these training opportunities and equip themselves for all future recruitment challenges.

Post-COVID 19 threats, the IAI office started a full-fledged offline functioning from March 2022 onwards. We are in the process of having seminars and examinations in the physical mode like pre-Covid regimes depending on the situation.

The March 2022 examination has just been completed; I wish all candidates all the best for their upcoming results.

Session 3 : Expanding Horizon - Actuarial Profession in Global Organization

Date: 10th February 2022; Thursday Time: 14:30 - 15:00 IST

Chairperson / Moderator: Hemant Kumar Pahuja, Leader - Actuarial Function Principal Global Services

Speaker: Alexander John, India Leader - Wealth Analytical Services, Mercer Consulting Limited India Pvt Ltd

Mr. Hemant Kumar started by setting the context this wonderful session in which he highlighted-
- how actuarial profession has bloomed in last two decades
- how Indian actuaries are playing instrumental role in global organizations.

He then introduced us to the speaker - Mr. Alexander John. Alex gave us a brief overview of his fascinating journey in Actuarial profession - from scarcity of actuaries and opportunities to the “Great resignation”.

Indian actuaries in global organizations

- Growing confidence in to employ Indian talent - Phenomenal growth in the number of employees coming to the country over the years.
- Increasing demand for our skilled resources - Many of our members have moved to other geographies permanently to further their careers.
- Growing Global Capability Centers (GCC) in India

Key Drivers of our achievements globally

- Teams in India have
  - fast learning pace
  - high caliber and ambitious talent
  - great language capabilities
  - curiosity to learn more, to do more different things and to add more value
- Our fraternity focuses on -
  - quality and accuracy
  - agility to adopt new practices
  - maintaining and building stakeholders relationships
  - adaptation to modern technology
  - great insights
  - confidence building capabilities
  - learning agility
- India has moved from the role of doer (cost) to the influencer (value).

What we still lack in?

- Not yet able to
  - fully harness the demographic dividend that we have.
  - provide environment to foster the talent we have.
  - provide equal opportunity to all
- Lack of trained resources
- 9000 students and employment opportunities for 4000.
- Not enough organizations are invested in the build capabilities.

What can to be done to continue our growth in future?

- The four pillars -
  - the Institute,
  - its member,
  - the industry and
  - academia/universities

  should work together and participate equally to meet this global need of talent.
- Investment in skilling new resources on a regular basis is mandatory.
- Focusing on practice, learning and gaining more experience is extremely critical.
- More organizations should invest in training and developing this talent.
- Strike a balance between building talent vs buying talent.
- Focus on learning new technology.
- Organizations, the institutes and the students need to *“focus on long term objectives rather than short term gains”* to ensure longevity and sustainability of this profession.
- We need to move away from our existing biases and look through fresh lenses.

Things to keep in mind moving ahead

- More than adequate actuarial work is available globally.

- Skills required and experience to gain are equally valuable irrespective of the domain you are in.
- Profession like Actuarial Science has a long learning curve. So, more time needs to be spent in training and developing new resources.
- Patience is needed to ensure that we skill ourselves appropriately before taking the next task.
- Technology is pervasive. Role of actuaries will change as time goes on and technology will no longer be optional but a necessity.
- Decisions taken today are going to be foundation stone for how we are going to bid for the future. So, focus on long term objectives of the organizations.
- Capabilities and recognition we have achieved in last few years is going to snowball and we are going to see more and more benefits coming to this community in India.

One message to actuarial professions:

- Actuarial professionals are impressive set of highly talented audience.
- Actuarial science is a noble profession which requires lot of time and sacrifices. So, we should treat it as a noble profession.
- <u>Working together and working for success of this entire fraternity and the profession is the key.</u>

Written by

Sakshi Gulati

sakshigulati1997@gmail.com

Sakshi Gulati is a student member of IAI and currently working as an Associate Analyst - Actuarial in a life Insurance Company.

Session 4 : IFRS 17 - A Catalyst For Shareholder Value

Date: 10th February 2022; Thursday Time: 15:00 - 16:00 IST

Moderator: Kailash Mittal, Partner, KPMG Assurance & Consulting Services LLP

Speakers: Nick Anderson, Board Member, International Accounting Standards Board

Philip Vermeulen, Global Client Service Partner & Global IFRS 17 Leader, EY

Jose John, Senior Director And Appointed Actuary, Max Life Insurance Company Limited

This was an engaging and insightful session, which got off to a start with an overview on IFRS17 and its benefits. IFRS17 is the first accounting standard that details reporting requirements for insurance companies. It replaces IFRS4, in which companies used local accounting requirements such as national GAAP.

How IFRS17 adds value to users' financial statements?

- Transparency - improves the quality of insurers' financial information
- Consistency - consistent and high-quality accounting standard for all insurance contracts across most jurisdictions-
  - reduces much of the existing diversity in reporting.
  - increases comparability in financial statements.
- Better reflection of reality – profit is spread over the contract's life in a series of smaller cash flows – giving more insight into how profit emerges.
- Beneficial for investors - More informative and granular disclosures provide investors proper insight into the entity's business model, exposures and performance.
- Transformation - Opportunity for insurers to transform existing business
  - Almost 2/3 looking at updating their actuarial process
  - More than 50% looking at modernizing/upscaling their systems

Primary enhancements that differentiate IFRS17 from IFRS4

IFRS4	IFRS17
• Companies use national standards when accounting for insurance contracts, resulting in lack of comparability.	• Companies across all jurisdictions apply consistent accounting for all insurance contracts, regardless of product.
• There is a line item in the Profit and Loss Account for change in Liability.	• Distinction between "Release in Best Estimate Assumptions" and "Release of Margins".
• Entities are free to derive their own interpretations of revenue recognition and calculation of reserves	• requires companies to measure insurance contract on updated estimates and assumptions which reflects the discount rate and risk adjustment.
• Profit recognition at the start of contract	• Insurers need to indicate the expected profit with the CSM, and only recognize the profit when it delivers the insurance service.
• Outlines what should be disclosed regarding methods and processes but provides limited guidance on how these disclosure requirements should be met.	• More detailed and granular disclosure.

Challenges in IFRS17

- <u>Increased balance-sheet volatility</u> - The effect of using current market discount rates will vary, resulting in greater volatility in financial results and equity
- <u>Increase in complexity</u> - Change is happening to different aspects of finance reporting as we are transition to

IFRS17.

- Cost overruns – Mismanagement of IFRS17 implementation can result in extensive cost overruns to insurers
- Technology - Larger volumes of data at greater granularity will drive complexity of the data architecture which can be challenging during implementation.
- Communication - New disclosure requirements will change the way performance is communicated.
- Principle-based approach - offers a lot of flexibility, but also requires intensive analysis.
- Different jurisdictions have different disclosure
- Overload of information – Existing measures remain important, and now on top of that we have IFRS. Understanding all of them in insurance business is complex.
- Cost of this disclosures - IFRS usually require companies to publish more extensive disclosure information than under local GAAP
- Fundamental mismatch between assets and liabilities - The management of assets and liabilities will be affected by the approach adopted to determine discount rates.

The way forward

- Transparency and comparability provided by IFRS17 will make the insurance sector a more attractive prospect for investors.
- IFRS17 requires insurers to set appropriate discount rates for liabilities.
- IFRS will make more sense if the underlying dynamic also change along with it. Otherwise, it will just be a layer on top which says it should be happening like this but it is not.
- Even then when one starts to understand the profit recognition profile. Those differ between and within jurisdictions.
- Should not treat IFRS17 as a compliance exercise but as an investment in your systems
- Flexibility in design choices, influences earnings and disclosures help assess sustainability of dividends.
- Volatility provides additional information.

Q/A

Will IFRS17 implementation be deferred?

- The introduction of IFRS17 is a long overdue and positive shift of paradigm.
- Pushing it further will cost extensively.

We are ready to implement this standard with confidence.

Is IFRS17 a major revamp?

- Change profit emergence patterns but no change in the profit file.
- More focus on Asset Liability management as this will be going in disclosures. So, more importance will be on volatility in balance sheet, product design and guarantees provided.

Written by

Sakshi Gulati

sakshigulati1997@gmail.com

Sakshi Gulati is a student member of IAI and currently working as an Associate Analyst - Actuarial in a life Insurance Company.

9th Webinar on Data Science and Analytics

Date: 23rd October 2021; Saturday **Time:** 15:00 - 17:00 IST

Chair: Subhendu Bal, President, IAI

Moderator: Vamsidhar Ambatipudi, Secretary, Advisory Group on Data Science & Analytics, IAI

Introductory Address: Heerak Basu, Chair, Advisory Group on Data Science & Analytics, IAI

Speakers: Priya Deshmukh, Chief Operating Officer, ManipalCigna Health Insurance Company Limited

Srilatha Kappagantula, Associate Vice President, Risk team, State street

How data science and digitization can transform health insurance and BFSI sector by creating value for the customers leading to increased growth in business

Introduction

Recent times have brought about various social changes and COVID-19 pandemic has further increased focus on digitization and use of digital technology hence data science and analytics has emerged as a rapidly developing field. Given the potential benefits of this field, to understand how it is evolving and how new gen tools are being deployed, the Institute of Actuaries of India is proactively conducting webinars on various relevant topics to add value for the audience.

9th webinar on Data science and analytics was conducted by the Data Science and Analytics Advisory Group on October 23, 2021. The objective of this webinar was to cover the relevant applications and current developments in field of data science.

Heerak Basu started the session by introductory address welcoming speakers and audience to the webinar, which was followed by the presidential address by Subhendu Bal who updated the audience on the activities by IAI. Vamsidhar Ambatipudi then introduced the speakers giving the relevance and importance of the topics to be discussed.

This webinar covered two very relevant applications of data science. First application is in health industry which is going through many waves and curves in the current times. Priya Deshmukh presented on how data science and digitization can transform the health insurance sector fueling healthy living and making it more competitive.

The second application is in the BFSI sector which has conventionally followed mass marketing and is undergoing a shift in current times. Srilatha discussed the role of data science in creating an integrated profile of customer in BFSI sector and use of analytics for hyper personalization and understanding customer genome leading to increased growth in business.

Use of Data Science in health insurance sector

COVID-19 pandemic has propelled the growth of healthcare and health insurance. Key drivers leading to real business growth in health insurance have been increased awareness for its need, high out of pocket expenditure, increase in preventive healthcare, technology usage by insurers to ease the services offered to customers, government reforms such as tax incentives, low cost health schemes, standardized product.

This growing market coupled with evolution of coverages such as OPD, VAS, home and virtual care, there is huge opportunity for industry participants. Increased usage of digitization means greater amount of data- structured, semi-structured and unstructured is being generated which can be leveraged using data analytics to improve product offerings and innovations, underwriting, claims services. There is a huge opportunity to process the relevant data from various sources to generate meaningful insights propelling business outcomes and solving consumer problems.

Customer Segmentation and Lifecycle

Huge amounts of data is generated across the customer lifecycle which can be used to generate meaningful insights thereby enhancing customer relationship management capabilities to create curated product offerings, underwriting protocols, customer service segments. Thus, using data analytics customer segmentation can happen at various stages as below:

- Acquisition: Identification of relevant target risk groups

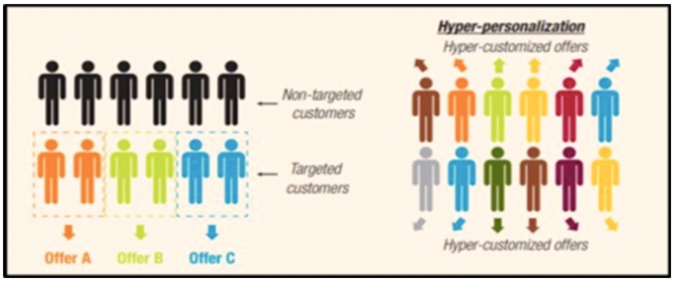
- Up-selling: Scores to identify potential customers most likely to extend their existing contract
- Cross-selling: Identifying target customers to increase lateral penetration of products
- Churn prevention: Constructing score groups based on internal (e.g.: product, sales channel, gender) and external data (e.g.: socio-economic data, income and family status) to identify vulnerable customers likely to discontinue existing products.
- Win-back: Identifying relevant groups due for renewals and tracking renewal rate

Tools and techniques witnessing strong traction
Use of artificial intelligence for underwriting, fraud analytics, internet of things(IoT) for behavioral underwriting, medical IoT for remote patient monitoring, sensor tech, hyper personalization of customer experiences, integration of various tech companies to create ecosystems, cloud based systems to ensure agility in provision of services.

Way Forward
Health insurance business models are rapidly moving towards integrated ecosystems. There is a shift from only utilizing home created models to wider ecosystem integrations for a one-stop shop catering to customer needs with personalized solutions. Increased collaboration ensures insurer is an active partner in customer's health journey and facilitates greater exchange of data, learnings for the benefit of all. This will enable tech driven ecosystem with 24*7 integrated digital health platform. This is to ensure that the pace of evolution of healthcare is matched by insurance provider to ensure greater innovation in product creation and distribution

Use of Data Science in BFSI sector

Data science can be used in BFSI sector in order to understand the customer better, get closer to customers, tell them what they need well before they realize it themselves thus going beyond customer expectations and providing value. When banks do not understand the customers, it leads to mass market scenario i.e. one size fits all leading to pushing the products. Mass marketing leads to lot of unnecessary expenditure as you are reaching to those customers who are not effective at all.



Customer Genome is knowing customer in entirety i.e. using all data relating to customer which leads to hyper-personalization. Aim of hyper personalization is to provide right product/service to right customer at right time and right location. This is done by receiving requisite data, processing it and then predicting on real time basis. A genome brings together multiple data sources across channels and every customer interaction/choice enriches the genome.

The banking and financial services industries have been adopting personalization across functional areas to optimize costs, income and manage risks such as churn, customer satisfaction, early warning system, behavior pattern analysis and grow business- market sizing and segmentation, cross-sell and retention, customer lifetime value. E.g.-Churn prediction can be done by identifying and tracking variables that affect churn as churn does not happen suddenly.

The customer follows a pattern before he finally leaves the company. So these variables (e.g.:-number of transactions by a customer in case of bank) can be identified and tracked to predict churn and align actions accordingly which in turn reduces risk.

Challenges and Good Practices of Data Science

There are various challenges of data science – requirement of a dynamic infrastructure to collect and process vast amount of data including that from multiple business units and from semi/unstructured datasets, accuracy of connected devices, selection bias, data privacy and confidentiality of sensitive data.

Data is important but unless it is sorted, arranged, presented virtually and explained with a story to derive meaningful insights and solve business and customer problems, it would not come to anyone's rescue.

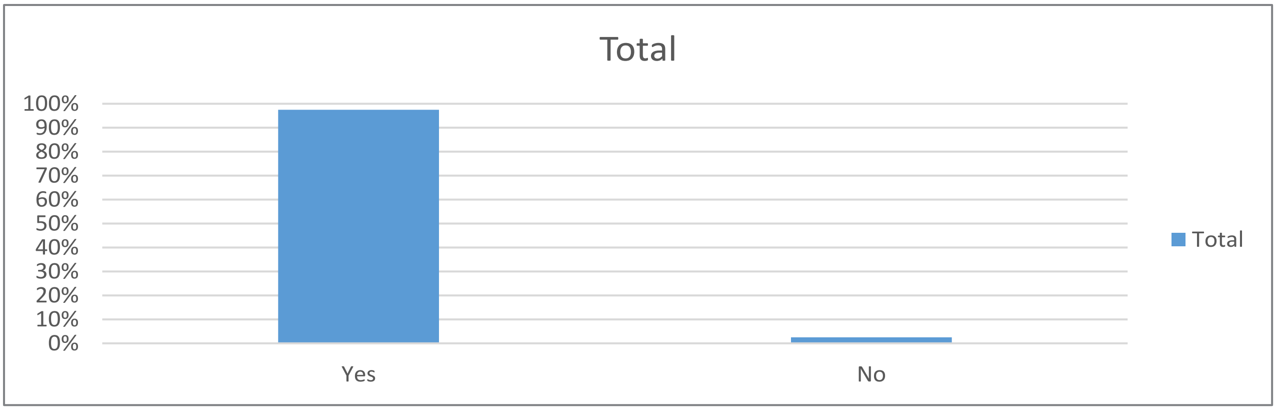
There are lots of success stories around data analytics but at the same time there are lots of failure stories as well hence it is necessary to understand the context and best use data to create value.

The webinar was very topical and has thrown open the ideas for the use of analytics and digitization by actuaries in health and BFSI sector.

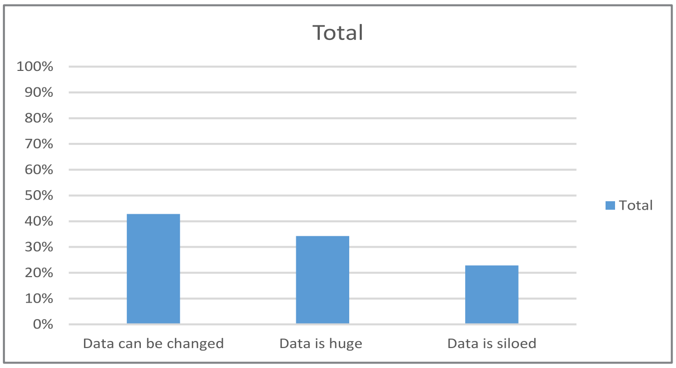
The Webinar was concluded with Vote of Thanks from the Vamsidhar Ambatipudi on behalf of the Advisory Group on Data Science and Analytics, IAI.

In order to make the webinar more interactive and understand the thought process of the audience, the organisers also arranged for few online poll questions.

House agrees for the companies to evolve their data capabilities in view of Future Healthcare eco-system?



One of the below is not a problem with Data?



Written by

Twinkle Agarwal

agarwal.twinkle@rocketmail.com

Twinkle Agarwal is a Fellow Actuary working as a Senior Manager-Actuarial at TATA AIG General Insurance Company.

10th Webinar on Data Science and Analytics

Date: 26th February 2022; Saturday Time: 15:00 - 17:00 IST

Chair: Heerak Basu, Chair, Advisory Group on Data Science and Analytics

Moderator: Manoj Kumar, Secretary, Advisory Group on Data Science and Analytics

Speakers: Ankit Mittal, Associate Director, Policy Bazaar

Shivani Venkatesh, Head - Insights, Analytics & AI CoE, RBL Bank

Introduction

The 10th webinar on Data Science and Analytics comprised of two segments -

i. Leveraging data using Actuarial Skills beyond traditional actuarial roles.

ii. Big data driven analytics to deliver value in banks

The webinar began with Manoj Kumar welcoming and introducing the speakers. In the first segment, the speaker, Ankit Mittal, explained the conversion model being employed at Policy Bazaar, as an example of how actuaries are moving away from the traditional roles of pricing and reserving. The second speaker, Shivani Venkatesh, described various use cases of big data analytics in banks.

Segment I: Leveraging data using actuarial skills beyond traditional actuarial roles

A conversion occurs when an individual who visits the Policy Bazaar website, decides to purchase a product and completes the transaction. Until the transaction happens, the individual gets classified as a lead, post which it gets converted to a booking. With the previously existing approach, despite the conversion figures increasing as planned, it was unclear whether they could increase further. There was also a lot of volatility in these figures for specific segments.

<u>To ensure the conversion model will be worthwhile, the aim was to increase the conversion from 15-20% to around 25% level. Additionally, the aim was to reduce the time taken to convert a lead.</u>

Model Factors

Ankit Mittal described the factors influencing purchase, with respect to private car policies. Despite having some amount of data, initially the challenge was to figure out how to use the available data.

The factors were analysed separately, and some proved to be less significant than others. However, Policy Bazaar specific and digital factors showed a very strong outcome.

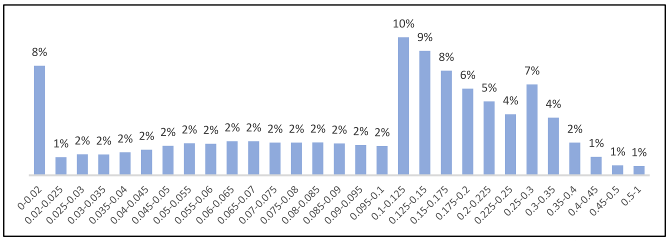
The factors that came to be the strongest indicators of conversion for fresh policies were:

Car Specific	Customer Behavior	Model Interactions	Policy Bazaar/Online Specific
Make/Model Fuel Transmission CC Range NCB Geography Vehicle Age IDV Plan Type	Date of lead Advance Renewals Previous Health Insurance Previous Life Insurance Previous Travel Insurance Lead source	Plan Type / Vehicle Age NCB / Vehicle Age Plan Type / Geography	Number of visits on website Number of connected calls Voice to text analytics Number of time "Claims" word is used in 5 minuted

<u>A GLM based approach was used to create multi-factor model to help provide a conversion score to each lead.</u> 5.5 million data points, spread across over 4 years were used to build the model, to ensure credibility.

Outcomes of the model

The model outcomes are represented in the form of a probability distribution. The x- axis represents the conversion probability; the first bar denotes that there is an 8% traffic share that would convert with a probability of less than 2%.



*sample numbers

It was found that there was a 25% traffic share converting with over a 20% probability. The aim was to increase the conversion rate by either increasing the traffic share to around 40% or the 20% probability to 30-35%. <u>The two sides of the distribution are dealt with differently. Leads on the left side, that have less than a 10% probability of</u>

conversion, are assisted (through calls etc) to ensure a higher probability of conversion. On the right side, the leads are segmented based on whether they are more likely to convert assisted or unassisted, and accordingly action is taken.

The model was rolled out on random leads as opposed to on the entire traffic. These leads were further split into the experiment and non-experiment set within the same conversion band. It was noticed that the probability of conversion for the leads in the experiment set jumped significantly. Only once the experiment provided the desired results was it fully implemented.

This model is used by multiple teams within Policy Bazaar. For example, the model provides insights on sourcing, to the Marketing team, to ensure better quality of leads. Additionally, the Actuarial team is constantly monitoring the actual vs expected results, refining the model to improve the results and expanding it to other lines of business.

Segment II: Big data analytics in banking

In banking, the flow of the machine learning process involves acquiring the data, modelling based on requirement, integrating the results with front-end systems and finally using these results as an aid in decision-making. The analysis is done across 5 domains

1) Acquire comprising of Sales Force Productivity, Lead Generation etc
2) Understand comprising of Customer Profitability, Transaction Patterns etc
3) Service comprising of BOT Analytics, Branch Analytics etc
4) Engage comprising of Cross Sell Propensity, Retention Models etc
5) De-risk comprising of Early Warning System, Transaction Risk Monitoring etc

Shivani Venkatesh detailed out 3 instances of Big Data Analytics in Banking, in her presentation.

1. Early warning system

In case of mid- to large loans, in addition to the extensive underwriting process involved at the time of sanction, this system helps to provide alerts of potential risk events in the associated accounts. This is done by combining the data from various sources (as mentioned below) and understanding the link between them, to provide a more comprehensive picture about the company.

1) External Data: Related parties (Directors, Owners), Legal cases, Credit history
2) Internal Data: Transaction patterns, Customer and Supplier details
3) Social Media footprint

Data tables and certain keywords that are usually manually extracted from documents, are identified using AI with the help of the created key-word dictionary and an NLP model. Due to the low event rate, initially experiment design involved a lot of analysis to identify an event of risk, and using an internal scoring model, the base of events considered risky were expanded. The model has evolved over 5 "generations" with a change in data used, number of independent variables and algorithm over each generation. Prior to algorithm selection, a multiple-algorithm comparison is done to find the one providing the best results.

2. HR Model

Despite the relatively smaller volumes of employee data, it is usually scattered and inconsistent. A 360 -degree view of employees was obtained by combining various data sources. The attrition analysis done based on this provided a risk score for each employee and other details such as key features leading to attrition and policy changes required to improve engagement. The employees are divided into cohorts based on features such as seniority and role, and the model is run separately for each cohort. In addition to the compensation variable, previous work experience and employee engagement, amongst other variables, are significant indicators of attrition. The results from the model are available on the HR app of the Company, where the risk score of each employee is visible to the supervisor, along with other actionable areas to increase retention.

3. Anomalous acquisitions

With the increased digital interaction between banks and their customers, there has also been an increase in anomalous acquisitions (i.e., account openings via stolen/synthetic identities, via BOTS/emulators, and the misuse of a customer's KYC details). The model created to help resolve this issue, involves integration of data to the digital on-boarding process to create a high- and medium- risk scoring for customers.

Conclusion

Manoj Kumar spoke about how big data provides results only if interpreted and used correctly, and if results are spurious the data must be discarded; this is where Actuaries must use their judgement. He concluded the session with a vote of thanks.

Written by

Susan Abraham

abraham.susan29@gmail.com

Susan Abraham is a student actuary at IFOA and IAI. She is currently working in the pricing team in a General Insurance company.

Press Coverage published in print and online media dated February 2022

PRINT COVERAGE

Publication: The Pioneer Hyderabad
Date: February 22, 2022
Print/Online: Print

the pioneer Hyderabad

considered to be the next big thing, fashion designer Saroj Jalan hasn't forgotten her roots. She continues to give the most beautiful blend of traditional weaving with some digital prints. How cool is that? She hasn't let the traditional

actor who swept the designer off her feet with the way she/he exhibited her designs for the masses to gauge? She shares, "It was none other than Genelia D'Souza. You know what? Imagery has gained incredible social and commercial weight in all realms of our lives. The process is more like imagining, combining, planning, and then executing. It's

created out of sheer passion back in the day! The journey has been impeccable. Achieving the day for the bride with the utmost proficiency is what Saroj Jalan aims for. The idea is to bring the dreams of the bride to her attire. She designs the lehenga so

that th ish an wardr She w her cr nothi than of jew ellery

The know-hows of an actuarial community

Just about anyone can start a business. Once you fill out a few forms, get the necessary permits, offer a legitimate service, and advertise it a little bit, it's safe to say you are a business owner. But, there is this Virtual Actuarial Conclave 2022, an annual flagship event being hosted by the Institute of Actuaries of India, which is building a niche of its own! This event provides a platform which brings renowned global speakers from across the globe together and provides unmatched learning with networking opportunities to the members of the actuarial community. That's all this event is about. Several factors may affect the success of an event like this, but the president, Mr. Subhendu Bal, never let anything deter this opportunity. How does he continue to maintain this successful venture? That was our embarking question to him, and he goes on to say, "Being the President of the Institute of Actuaries of India (IAI), my role is to head the Council of IAI. The typical role is to establish policies, engage stakeholders, review the progress, and make decisions for the betterment of the profession. Over the past few years, the demand for actuarial resources has grown tremendously. The liberalisation of the insurance industry, growth in the economy, financial inclusion, and the inclination of Indian society to become financially secure have fuelled the demand for actuarial talent from insurance and pension companies in India. This institute was basically established under the Actuaries Act 2006. It works under the nodal Ministry of Finance. The actuarial profession was established in India more than 78 years ago when the Actuarial Society of India was established in the year 1944. Since then, the actuarial profession has come a long way." He continues, "At present, I work as a Chief Actuary and Chief Risk Officer at SBI Life Insurance Company Ltd. On Saturdays, when I have a day off from my regular job at SBI Life, I usually go to the IAI office. My entire day is generally pre-scheduled on this day with meetings to plan and review the IAI initiatives. I'll have to put in a few extra hours today to get things moving."

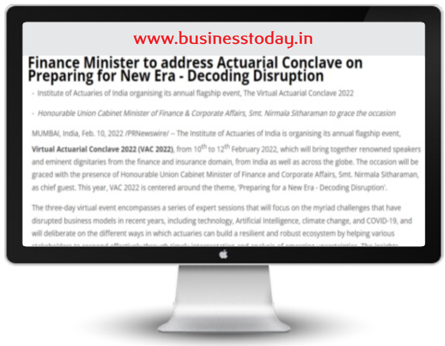
But, what's his success mantra after all? Because many people think that they will turn on their computers or open their doors and start making money, only to find that making money is much more difficult than they thought. He sheds light on this, "To be successful in any task or project based on strategy, believing in the team effort and subscribing to the goals and objectives of any task paves the way for success. Any project or task generally sees the light of the day provided we follow a few principles. Before taking up any task, it is necessary to understand its scope and objective, as I believe that once the scope is clearly understood, including how stakeholders of this task are getting benefitted, then the task of any project becomes relatively easier to execute. The success of any project is heavily dependent on the team in charge."

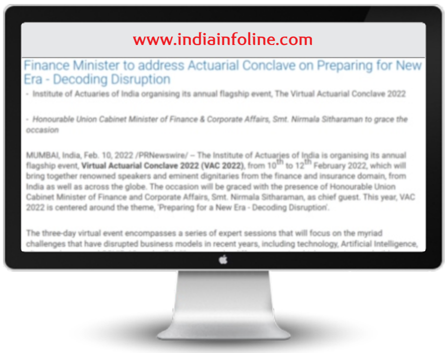
He also believes that once a team of people who believe in the project and its goals is in place, then success is almost guaranteed. Before starting any project, it is essential to speak with each team member about the project's intent so that the team is aligned with the project goals and each team member is very clear about his or her role and responsibilities. Also, drawing a feasible project plan with clear timelines and proper documentation is very integral to the overall success of any project. He himself tries to monitor the project plan at specific intervals so that any issues arising are addressed at the earliest possible stage. He would summarise that the key to the success of any project is the clarity of the project or task with proper team collaboration. What inspired him to go on with the conclave idea as such? He shares, "It's already an established annual signature event of the Global Conference of Actuaries conducted every year with several national and international speakers presenting their thoughts. Also, during this event, the institute felicitates newly qualified actuaries with a Certificate of Fellowship and newly qualified associates with a Certificate of Associateship, along with some cultural events. As we all know, the pandemic has impacted the whole world. I was exploring and trying to think about how we can continue to conduct our regular actuarial examination and entrance examination, ACET, for our students without impacting the quality of the examination. After careful planning, we started to conduct our examination online with proper proctoring. The feedback on the online examinations was great and very encouraging. This success in conducting actuarial examinations, along with wanting to felicitate our newly qualified actuaries and associates, inspired me to conduct the Virtual Actuarial Conclave (VAC) for the first time. The other reason for my inspiration to shift in virtual mode is the availability of the best possible eminent speakers across the globe and without any travel requirement."

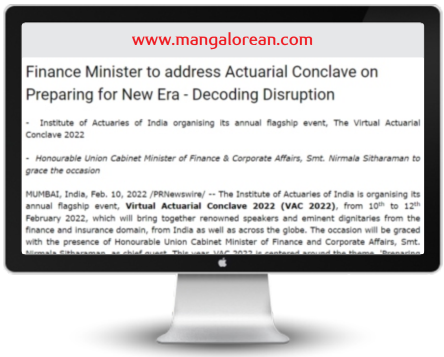
He was surprised to notice that they had received a tremendous response from the actuarial community, with over 1,900 registrations for the event VAC 2021. The most differentiating and beneficial features of the online conclave are the ability to invite expert speakers and the ease with which attendees can participate in the conclave while sitting comfortably in their homes. He added, "Based on our learning from the first conclave, we planned our second conclave on a grander scale by building a three-dimensional virtual platform and inviting international and domestic speaker experts in their fields." We were honoured to get some of the best speakers from across the globe! The conclave received special messages from the honourable Prime Minister of India and from the honourable Union Cabinet Minister for Finance and Corporate Affairs of India — this is the first time in the history of the institute."

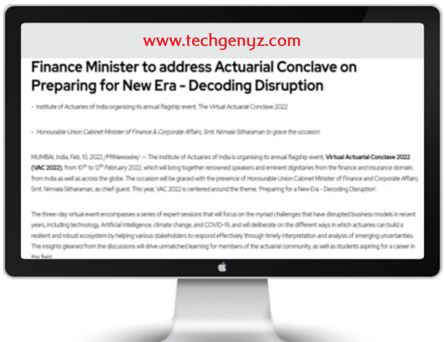
Thinking about engaging generation Z, he felt that they must get them early on. They found students, especially from the smaller towns and rural areas, who were not aware of the actuarial profession and the number of opportunities it generated for them. They debated how we could help them. In line with the National Education Policy 2020, to encourage and support the students, they have also announced that they will conduct an Olympiad in Actuarial Science for Indian Students (OASIS). Tasks like naming the conclave and creating a logo are obvious, but what about the less-heralded, equally important steps? He says, "The onset of the pandemic was one of the biggest challenges. It was clear that we could no longer conduct offline examinations. I considered these challenges opportunities to better the lives of others. The opportunity to conduct the actuarial examination digitally for the first time to help the students write their examinations without any travel to the examination centre during this COVID pandemic paves the way for the future. For the first time, an electronic ballot was used to fill a casual vacancy on the council. Hosting a significant event like GCA in the pandemic was also very challenging, but we overcame this by swiftly shifting to VAC." With his children growing, he started to understand generation Z more closely. And he felt that at the IAI they needed to upgrade their approach to engage them. Accordingly, he has designed the IAI 2.0 strategy to engage Generation Z better!

ONLINE COVERAGE










www.socialnews.xyz

Finance Minister to address Actuarial Conclave on Preparing for New Era – Decoding Disruption

- Institute of Actuaries of India organising its annual flagship event, The Virtual Actuarial Conclave 2022

- *Honourable Union Cabinet Minister of Finance & Corporate Affairs, Smt. Nirmala Sitharaman to grace the occasion*

MUMBAI, India, Feb. 10, 2022 /PRNewswire/ -- The Institute of Actuaries of India is organising its annual flagship event, **Virtual Actuarial Conclave 2022 (VAC 2022)**, from 10th to 12th February 2022, which will bring together renowned speakers and eminent dignitaries from the finance and insurance domain, from India as well as across the globe. The occasion will be graced with the presence of Honourable Union Cabinet Minister of Finance and Corporate Affairs, Smt. Nirmala Sitharaman, as chief guest. This year, VAC 2022 is centered around the theme, 'Preparing for a New Era - Decoding Disruption'.

The three-day virtual event encompasses a series of expert sessions that will focus on the myriad challenges that have disrupted business models in recent years, including technology, Artificial Intelligence, climate change, and COVID-19, and will deliberate on the different ways in which actuaries can build a resilient and robust ecosystem by helping various stakeholders to respond


www.hellomumbainews.com

Finance Minister to address Actuarial Conclave on Preparing for New Era - Decoding Disruption

- Institute of Actuaries of India organising its annual flagship event, The Virtual Actuarial Conclave 2022

- *Honourable Union Cabinet Minister of Finance & Corporate Affairs, Smt. Nirmala Sitharaman to grace the occasion*

MUMBAI, India, Feb. 10, 2022 /PRNewswire/ -- The Institute of Actuaries of India is organising its annual flagship event, **Virtual Actuarial Conclave 2022 (VAC 2022)**, from 10th to 12th February 2022, which will bring together renowned speakers and eminent dignitaries from the finance and insurance domain, from India as well as across the globe. The occasion will be graced with the presence of Honourable Union Cabinet Minister of Finance and Corporate Affairs, Smt. Nirmala Sitharaman, as chief guest. This year, VAC 2022 is centered around the theme, 'Preparing for a New Era - Decoding Disruption'.


www.thehindu.com

EDUCATION

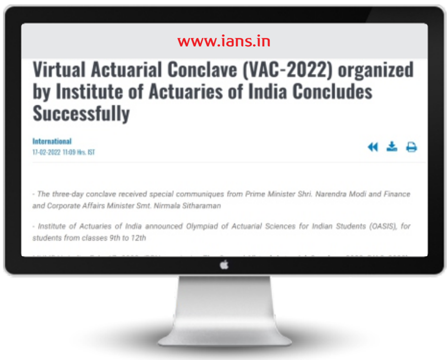
News from the world of Education: March 1, 2022

MARCH 01, 2022 14:07 IST
UPDATED: MARCH 01, 2022 22:54 IST

SHARE ARTICLE PRINT A A A

Information on research, MoUs, partnerships and other events in schools and colleges.

At IIT Guwahati

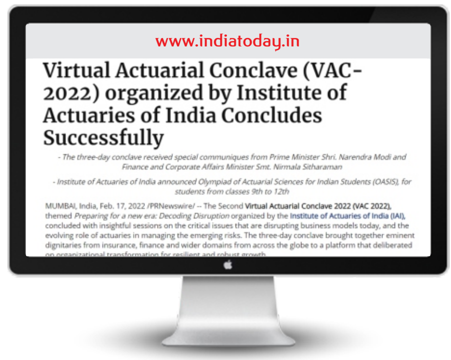

www.ians.in

Virtual Actuarial Conclave (VAC-2022) organized by Institute of Actuaries of India Concludes Successfully

International
17-02-2022 11:09 Hrs. IST

- *The three-day conclave received special communiques from Prime Minister Shri. Narendra Modi and Finance and Corporate Affairs Minister Smt. Nirmala Sitharaman*

- *Institute of Actuaries of India announced Olympiad of Actuarial Sciences for Indian Students (OASIS), for students from classes 9th to 12th*


www.indiatoday.in

Virtual Actuarial Conclave (VAC-2022) organized by Institute of Actuaries of India Concludes Successfully

- *The three-day conclave received special communiques from Prime Minister Shri. Narendra Modi and Finance and Corporate Affairs Minister Smt. Nirmala Sitharaman*

- *Institute of Actuaries of India announced Olympiad of Actuarial Sciences for Indian Students (OASIS), for students from classes 9th to 12th*

MUMBAI, India, Feb. 17, 2022 /PRNewswire/ -- The Second **Virtual Actuarial Conclave 2022 (VAC 2022)**, themed *Preparing for a new era: Decoding Disruption* organized by the Institute of Actuaries of India (IAI), concluded with insightful sessions on the critical issues that are disrupting business models today, and the evolving role of actuaries in managing the emerging risks. The three-day conclave brought together eminent dignitaries from insurance, finance and wider domains from across the globe to a platform that deliberated on organizational transformation for resilient and robust growth.


www.news.easyshiksha.com

Virtual Actuarial Conclave (VAC-2022) organized by Institute of Actuaries of India Successfully Concludes

Virtual Actuarial Conclave 2022

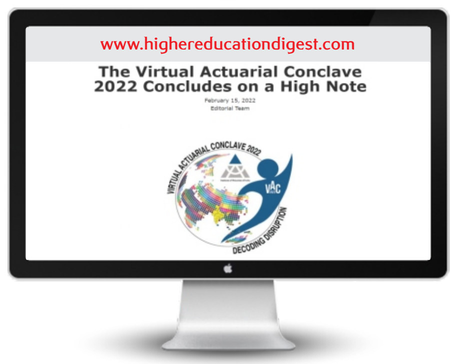

www.indiaeducationdiary.in

Virtual Actuarial Conclave (VAC-2022) Organized By Institute Of Actuaries Of India Successfully Concludes

By India Education Diary — On Feb 18, 2022

Mumbai : The Second Virtual Actuarial Conclave 2022 (VAC 2022), themed Preparing for a new era: Decoding Disruption organized by the Institute of Actuaries of India (IAI), concluded with insightful sessions on the critical issues that are disrupting business models today, and the evolving role of actuaries in managing the emerging risks. The three-day conclave brought together eminent dignitaries from insurance, finance and wider domains from across the globe to a platform that deliberated on organizational transformation for resilient and robust growth.

The event received special communication from the Honorable Prime Minister Shri. Narendra Modi who acknowledged the contribution of actuaries for building an India of the future and conveyed his best wishes for a successful and fruitful conclave with stimulating discussions on a wide spectrum of issues.


www.highereducationdigest.com

The Virtual Actuarial Conclave 2022 Concludes on a High Note

February 15, 2022
Editorial Team


www.businesstoday.in

Virtual Actuarial Conclave (VAC-2022) organized by Institute of Actuaries of India Concludes Successfully

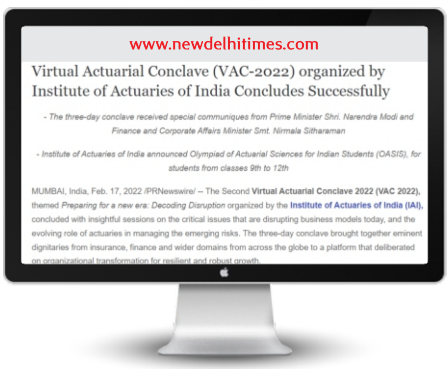
- *The three-day conclave received special communiques from Prime Minister Shri. Narendra Modi and Finance and Corporate Affairs Minister Smt. Nirmala Sitharaman*

- *Institute of Actuaries of India announced Olympiad of Actuarial Sciences for Indian Students (OASIS), for students from classes 9th to 12th*

MUMBAI, India, Feb. 17, 2022 /PRNewswire/ -- The Second **Virtual Actuarial Conclave 2022 (VAC 2022)**, themed *Preparing for a new era: Decoding Disruption* organized by the **Institute of Actuaries of India (IAI)**, concluded with insightful sessions on the critical issues that are disrupting business models today, and the evolving role of actuaries in managing the emerging risks. The three-day conclave brought together eminent dignitaries from insurance, finance and wider domains from across the globe to a platform that deliberated on organizational transformation for resilient and robust growth.

The event received special communication from the **Honorable Prime Minister Shri. Narendra Modi**, who acknowledged the contribution of actuaries for building an India of the future and conveyed his best wishes for a successful and fruitful conclave with stimulating discussions on a wide spectrum of issues.

In her communique, the **Honorable Finance and Corporate Affairs Minister Smt. Nirmala Sitharaman** urged the

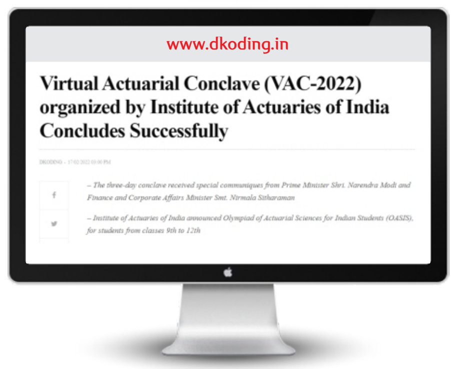

www.newdelhitimes.com

Virtual Actuarial Conclave (VAC-2022) organized by Institute of Actuaries of India Concludes Successfully

- *The three-day conclave received special communiques from Prime Minister Shri. Narendra Modi and Finance and Corporate Affairs Minister Smt. Nirmala Sitharaman*

- *Institute of Actuaries of India announced Olympiad of Actuarial Sciences for Indian Students (OASIS), for students from classes 9th to 12th*

MUMBAI, India, Feb. 17, 2022 /PRNewswire/ -- The Second **Virtual Actuarial Conclave 2022 (VAC 2022)**, themed *Preparing for a new era: Decoding Disruption* organized by the **Institute of Actuaries of India (IAI)**, concluded with insightful sessions on the critical issues that are disrupting business models today, and the evolving role of actuaries in managing the emerging risks. The three-day conclave brought together eminent dignitaries from insurance, finance and wider domains from across the globe to a platform that deliberated on organizational transformation for resilient and robust growth.


www.dkoding.in

Virtual Actuarial Conclave (VAC-2022) organized by Institute of Actuaries of India Concludes Successfully

- *The three-day conclave received special communiques from Prime Minister Shri. Narendra Modi and Finance and Corporate Affairs Minister Smt. Nirmala Sitharaman*

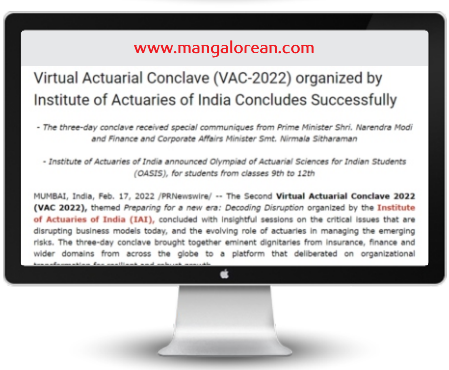
- *Institute of Actuaries of India announced Olympiad of Actuarial Sciences for Indian Students (OASIS), for students from classes 9th to 12th*


www.businessupturn.com

Virtual Actuarial Conclave (VAC-2022) organized by Institute of Actuaries of India Concludes Successfully

By PR Newswire — On February 17, 2022 14:09

Mutual Fund investments are subject to market risks, read all scheme related documents carefully.


www.mangalorean.com

Virtual Actuarial Conclave (VAC-2022) organized by Institute of Actuaries of India Concludes Successfully

- *The three-day conclave received special communiques from Prime Minister Shri. Narendra Modi and Finance and Corporate Affairs Minister Smt. Nirmala Sitharaman*

- *Institute of Actuaries of India announced Olympiad of Actuarial Sciences for Indian Students (OASIS), for students from classes 9th to 12th*

MUMBAI, India, Feb. 17, 2022 /PRNewswire/ -- The Second **Virtual Actuarial Conclave 2022 (VAC 2022)**, themed *Preparing for a new era: Decoding Disruption* organized by the **Institute of Actuaries of India (IAI)**, concluded with insightful sessions on the critical issues that are disrupting business models today, and the evolving role of actuaries in managing the emerging risks. The three-day conclave brought together eminent dignitaries from insurance, finance and wider domains from across the globe to a platform that deliberated on organizational transformation for resilient and robust growth.


www.indiainfoline.com

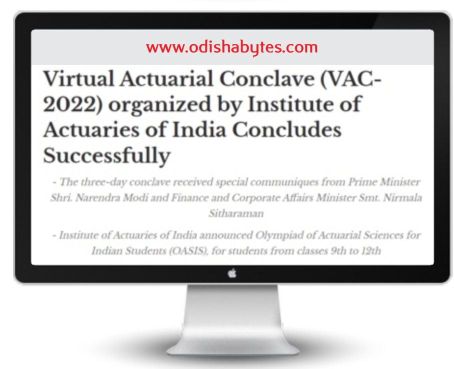
Virtual Actuarial Conclave (VAC-2022) organized by Institute of Actuaries of India Concludes Successfully

- *The three-day conclave received special communiques from Prime Minister Shri. Narendra Modi and Finance and Corporate Affairs Minister Smt. Nirmala Sitharaman*

- *Institute of Actuaries of India announced Olympiad of Actuarial Sciences for Indian Students (OASIS), for students from classes 9th to 12th*

MUMBAI, India, Feb. 17, 2022 /PRNewswire/ -- The Second **Virtual Actuarial Conclave 2022 (VAC 2022)**, themed Preparing for a new era: Decoding Disruption organized by the **Institute of Actuaries of India (IAI)**, concluded with insightful sessions on the critical issues that are disrupting business models today, and the evolving role of actuaries in managing the emerging risks. The three-day conclave brought together eminent dignitaries from insurance, finance and wider domains from across the globe to a platform that deliberated on organizational transformation for resilient and robust growth.

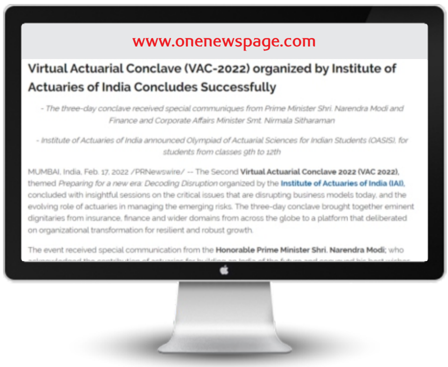
The event received special communication from the **Honorable Prime Minister Shri. Narendra Modi**, who acknowledged the contribution of actuaries for building an India of the future and conveyed his best wishes for a successful and fruitful conclave with stimulating discussions on a wide spectrum of issues.

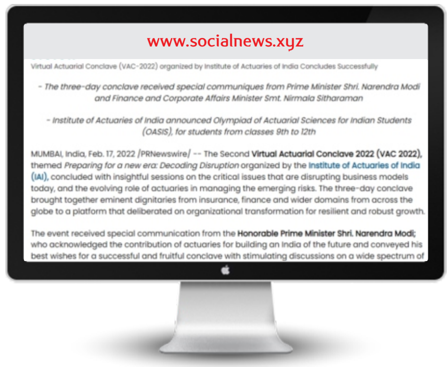

www.odishabytes.com

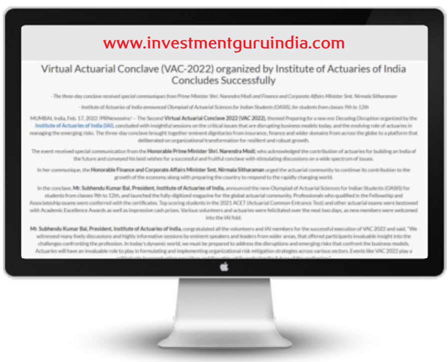
Virtual Actuarial Conclave (VAC-2022) organized by Institute of Actuaries of India Concludes Successfully

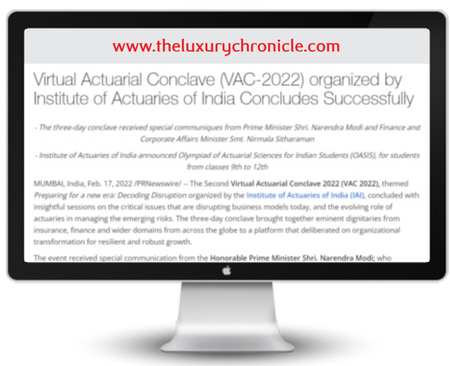
- *The three-day conclave received special communiques from Prime Minister Shri. Narendra Modi and Finance and Corporate Affairs Minister Smt. Nirmala Sitharaman*

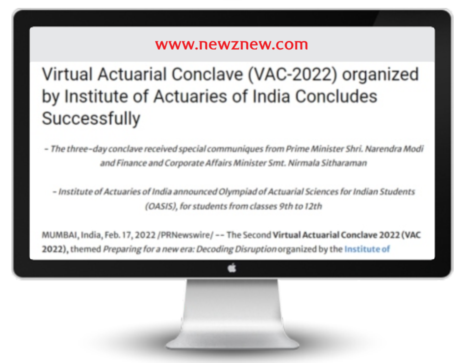
- *Institute of Actuaries of India announced Olympiad of Actuarial Sciences for Indian Students (OASIS), for students from classes 9th to 12th*











The Actuary India wishes many more years of healthy life to the Associate & Fellow members whose Birthday falls in February 2022 - March 2022 and have crossed above 60 age.

A P Peethambaran
A Venkatasubramanian
Asok Kumar Podder
Chandan K Khasnobis
G Chidambar
H C Mehta
Hanumantha K Rao
Hitesh Motichand Shah
K K Dharni
M Venkatesan
Madhuri Jayant Kulkarni
Rajagopalan V
S Krishnan

Pension Investment Decisions

Preamble

Pension is regarded as a mutual contract between the pension provider and member with a promise of providing benefits on retirement, ill-health, or death. The size of the pension fund depends on the investment return and contributions either from employer, members, or both which makes investment to be the most important element for the pension fund because it could even cause heavy losses if a wrong decision is taken related to the investment strategy movement/shifts. Hence, understanding the nature/type of investment strategy becomes mandatory for a saver. This paper would cover the aims of an investment strategy and decisions made under a different types of pension schemes.

The aims of an Investment strategy:

1. Maximize Expected Return: Investment in higher income-generating assets help in various ways such as they increase the size of the pension fund and reducing the employer's future contributions, however, under defined contribution schemes it adds to greater flexibility and liquidity. Equities provide higher returns in long run but are considered as a highly volatile asset class.

Ranking of the asset class
- Equities
- Property
- Corporate Bonds
- Fixed Interest Government Bonds
- Index-Linked Government Bonds
- Cash

Increasing
Expected Returns
&
Risk

2. Meet the Matched Position: The matched position could be assessed by analyzing the correlation between investment return and the growth rate of liabilities.
- Matched position helps in reducing the volatility of surpluses and deficits that further means a more stable contribution rate (employer, employee, or both) and scheme remain solvent eventually.
- Best matching assets are usually characterized with lower returns which vary according to the type of member i.e., *Active*, *Deferred*, and *Retired*.

Active Liabilities are best matched with Index-linked bonds; however, active member liabilities are long-term in nature.
- Hence, asset classes such as property and/or equity could provide the best match in the long-term but unpredictable real return in the short run that could even lead to investment losses.

Pensioner Liabilities are short-term than Active member liabilities. Hence investment-grade bonds of matching duration could provide the best match.
- The main objective while setting an investment strategy would be to enable a greater match unlike that for active members i.e., maximizing profitability.
- Moreover, the nature of pensioner liabilities depends on a link between future Pension increases and Inflation, hence Index-linked bonds could match pension payment linked to inflation. However, Inflation swaps are another option.

Deferred Liabilities are of similar duration to Active member liabilities, however, there is no link with the salary raise rate.
- Hence, long term Investment grade bonds could provide the best match, however, bonds of similar duration are not available, hence long-dated Interest rate swaps could be used to lengthen the duration of a bond portfolio that makes it an effective tool in the LDI strategy (Liability Driven Investment: where Assets are chosen concerning a specific set of liabilities).
- However, *Interest rate swaps* are exposed to Interest rate and Credit risk. Since the interest rate does not always match the desired percentage, hence it gives rise to Interest rate risk. Moreover, swaps are not exchange-traded rather an over-the-counter instrument, hence the parties could perhaps default.
- Furthermore, where deferred member liabilities are linked with an increased rate, then inflation swaps or index-linked bonds could be used to hedge the inflation risk.
- Likewise, Interest rates swaps, *Inflation swaps* also have a few disadvantages such as collateral is required, hence it restricts Investment freedom as the asset which is on collateral couldn't be liquified, hence the second risk with Inflation swaps is that they are illiquid.

3. Diversification: It means investing across a variety of asset classes to minimize the investment risk.
Diversification could be achieved
- Within an asset class i.e., equities. Investing in companies that are negatively correlated with each other.
- Across different asset classes (as mentioned above).
- Investing internationally (overseas asset class),

however, would involve various problems and increase the cost eventually.
- Investing across Alternative asset classes which are explained later in this paper are negatively correlated with the stock market, hence diversification could be achieved.

Investing in own asset class, usually known as ***Self Investment*** would not be classified as the best investment practice as if the employer goes bankrupt, then this could create huge losses in the pension fund, thereby, affecting member benefit payments.

4. Maintain Liquidity: Liquid assets are classified as short-term and lower income-generating assets.
- A liquid investment is usually done by schemes (Defined Benefit) that are closed, discontinued, or have a reducing population with a purpose to pay benefits.

Few types of liquid and lower income-generating assets are:
- Cash,
- Government Bonds, and
- Securities issued by large companies.

Investment strategy with Defined Benefit and Defined Contribution Schemes

The Defined Benefit schemes are based on there:
- The ***Maturity level***, which is ***New, Immature, and Mature***
- The ***Continuity status*** i.e., ***Closed for new entrants, Closed to future accrual/Discontinued*** and ***Self-Sufficient scheme***

New Scheme: Where all the members are new entrants which means they have zero past service years, moreover there are no pensioners and/or deferred members. It's implied that with zero past service years the past service liabilities are zero.
- However, within a few years they built past service years and liabilities, but pensioners and deferred pensioner liabilities grow at a smaller rate because the members leave the service (joins another employer) and other decrements and retire.
- The size of the pension fund is small as the scheme is new.
- Hence, investment volatility would not create large surpluses or deficits.
- The contribution income in the pension fund is higher than the benefit payout as all the members are actives with zero past service years and there are fewer or no pensioners/ deferred pensioners.
- Moreover, the liabilities are long in terms of duration (for active members only).
- The investment objective would be to maximize the investment returns that would contribute towards an increase in the size of the fund.
- Hence, the suitable investment strategy would be to invest in long-term and return generating asset classes such as property, equity, and other *alternative asset classes* such as *infrastructure* etc. Perhaps providing predictable real returns in the long run.
- However, the alternative asset classes are illiquid eventually increases the expected returns due to an illiquidity premium attached with the overall return.
- Moreover, the returns are less correlated with the investment market, hence diversification is achievable.

Immature Scheme where few members were in the service when the scheme was set up. This means past service liabilities are growing at a faster rate than employees' payroll.
- Under this type of scheme, the pensioner and deferred pensioner liabilities are small but a growing fraction of the employee's payroll.
- The pension fund is small here too, hence investment volatility would not create large surpluses or deficits.
- The contribution income in the pension fund is still higher than the benefit payout as all the members are actives, hence due to the lower number of pensioners the benefit payment is less.
- Hence there won't be any need to sell the assets to pay benefits.
- The investment objective would be to maximize the returns that would contribute towards an increase in the size of the fund.
- The suitable investment strategy for an immature pension scheme would be investing in the long term and return generating asset classes such as property and/or equity.

Mature Scheme is a scheme where none of the members were in service when the scheme was set up. Hence the past service liabilities are growing at the same rate as employees' payroll.
- The pensioner and deferred pensioner liabilities are a large but stable fraction of total liabilities.
- Unlike New and Immature DB Schemes, the size of the pension fund is large, hence risky asset investment could create large surplus/deficits due to higher investment volatility.
- The contribution income in the pension fund is less than the benefit payout due to a large number of pensioners and deferred pensioners in the membership structure of the scheme.
- However, there won't be any need to sell the assets if the scheme has a stationary population.
- The suitable investment strategy would be to invest in a blend of return generating/long-run and less-risky/short-term asset classes
- For example, Equities and Bonds, etc.

Closed for New Entrants: This is the first step in the process of terminating the Defined Benefit scheme. The scheme that is closed for new entrants wouldn't remain stationary.

- Moreover, the average age of the scheme would increase every year, thereby, increasing the cost of funding (contributions).
- However, the benefit rights of existing members do not change and they continue to accrue benefits from future service and are considered as Active members unless the scheme is closed for future accrual or discontinued.
- With this the active population decrease year by year as members leave service, retire or die.
- The suitable investment objective and strategy for such a scheme would investing in return generating and matching asset classes such as Equities, Bonds, etc. because of long-term liabilities (of the existing active population) and falling active population.

Discontinued Scheme: A discontinued scheme means closed to future accrual of employee's benefits where at the date of discontinuance all the active members are treated as early leavers or deferred members i.e., they will not have any link with the salary growth rate.

When the scheme is discontinued, there are 6 options available to the trustees to decide upon. Which are as follows:

» *Continue the scheme on a self-sufficient basis without any further support from the employer.*
» *Transfer of liabilities to an insurance company.*
» *Transfer of funds to an insurance company, so they invest and pay the liabilities.*
» *Payment of funds to beneficiaries to extinguish future liabilities.*
» *Transfer of liabilities to another scheme held by the same employer.*
» *Payment of levy to the central discontinuance fund.*

- However, under a closed scheme, the benefit outgo is higher than the contribution income.
- The pension scheme assets are sold to cover the liabilities.
- Since the scheme which is closed to future accrual does not get any support from the employer i.e., the employer contributions are ***0***. However, a scheme is discontinued only after ensuring a fully funded status.
- Moreover, if the size of the pension fund is large then investment volatility could create large surpluses or deficits.
- The suitable investment objective for a discontinued (closed) scheme would be to enable liquidity and matching of liabilities and invest in short-term and matching asset classes such as bonds, cash, etc.

Self-Sufficient Scheme: The scheme that continues even after getting a discontinued status with an aim of gradual removal of liabilities.

- This may help the scheme to avoid the costs associated with buy-out and disinvestment eventually.
- There is no support from an employer, however, trustees only agree on this step after getting sufficient funds but there still remains the risk of a future shortfall.
- The investment objective here is to enable a greater certainty and liquidity to meet the benefit payments, hence a more cautious investment strategy is followed such as investment in Government/ Corporate Bonds, Longevity Swaps, and Bonds and buy-in contracts (annuities in the name of the scheme) may be included.
- Longevity swaps: where expected pension payments are exchanged for Actual pension payments. The payments are linked to the mortality experience of the scheme.
- Longevity bonds: where the risk of people longer than expected are transferred to investors. The coupon payments are linked to the mortality experience of a particular age group in the population, unlike longevity swaps.

In simple words, coupon payments are not made unless the longevity risk is high. For example, coupons would not begin unless the reference group reaches 75 years of age.

Role of Employer Covenant: Employer covenant simply means the financial ability and legal obligation of an employer to contribute and fund a defined benefit pension scheme. The employer covenant could be either strong or weak.

- ***Strong*** employer covenant means the state of employer business is financially strong and is fully committed to funding the scheme, hence it becomes flexible for the scheme to invest in risky asset classes which are characterized as long-term assets such as Equities, Property, etc., thereby, increasing the size of the fund with higher returns as increased employer contributions would cover the benefit payments.
- However, with a ***Weak*** employer covenant, the trustees would invest in matching asset classes such as bonds, cash, bank deposits, etc. that are characterized as short-term, thereby, providing a higher degree of liquidity, certainty, and match to protect the benefit rights of members. However, a recovery plan is designed by the trustees if the default prolongs.
- The level of employer covenant becomes an integral part of a pension scheme that trustees must monitor regularly as it affects the decision-making.

Defined Contribution Schemes: These are the schemes where the pension at retirement solely depends on the size of the pension pot. Hence, the investment and longevity risks are managed by the member.

- These schemes are also known as Money Purchase schemes where the funds available in the pension pot are used to buy a pension at retirement either in the form of annuity (with different options such as join life, single, enhanced, short term, etc.) or income drawdown.

- Hence, liquid and short-term investments are required during the pre-retirement period to avoid losses and reduction in the pension fund value.
- A strategy known as ***Life-styling*** is highly preferable within the DC schemes where it is advised to invest in return generating and risky asset classes during the early years of career & shift to less risky, liquid, & short-term assets to hedge investment losses & avoid a reduction in the fund value as the age goes near to the NRA.

Conclusion

Pension funds make promises to their members, guaranteeing a certain level of income paid in the future time period. This means they have to keep a balance between risk and return to fulfill those guarantees. The factors relevant to an investment strategy would be the term and nature of liabilities, maturity and attainment ratio (funding level) of the scheme, strength of employer covenant that plays a major role in deciding the investment strategy such as in new/immature scheme the higher contribution income allows investment in risky asset classes, wishes of an employer, fixed/increasing benefit, legal restrictions, and power of trustees to augment the benefit payments.

Written by

Bhavya Goel

Bhaevgoel@gmail.com

Bhavya Goel is an MSc Actuarial Management graduate from The Bayes Business School (formerly Cass), City, University of London, and a qualified MBA (Finance and Marketing) from Bharati Vidyapeeth University, New Delhi.

Hannover Re - as a global reinsurer we assume risks from other insurers and work with them to develop innovative products. Some 3,000 experts worldwide from a range of specialist disciplines devote their know-how and passion for their profession to strengthening and expanding our excellent market position on a daily basis. By taking an **assuredly different approach to their work**, they make us one of the most profitable reinsurance groups in the world.

If you want to experience how things are done in our Underwriting team for Non-Life Business at our Branch in **Mumbai / India**, join us on a **full-time basis, at the earliest possible date** as a

Pricing Actuarial Analyst with a focus on personal line products

You drive the development of data requirements, data governance and data collection and tabulation process together with underwriters and D&T team for portfoli o management, analytics and pricing.

Your Tasks - Challenge meets Responsibility

- Calculating and reviewing technical pricing for personal lines of business and cooperating closely with all stakeholders involved in the pricing process
- Performing portfolio analysis and monitoring the retail lines business regularly, providing reports on the performance as well as gaining experience in non-pricing aspects (i.e. market behaviour, claims processes, anti-selection, fraud)
- Supporting underwriters in the Personal Line team and other global offices in building new product, complete with pricing, wording and processes
- Researching products, markets and customer needs or enhancement in plan designs and new service offerings to meet customer expectations
- Contributing in pricing and data review local projects and global initiatives

Your Profile - Expertise meets Personality

- Minimum 3 years' experience in pricing non-life products, preferably in actuarial/product development/underwriting team of non-life insurance company
- Additional insurance qualifications are desirable
- Degree in actuarial science, mathematics and/or statistics
- Knowledge of MySQL or similar languages
- Experience in developing in at least one scripting language (Python, R, Perl and similar)
- Interest in economic correlations
- Enthusiasm for intercultural cooperation and team spirit

On a personal level, you can impress us with your keen analytical abilities, your good head for numbers as well as your metic ulous style of working with an eye for detail. If you also have good communication and organisational skills and are a team player, you have come to exactly the right place!
If you too would like the **assurance of a different way of working**, take your next career step with us. Simply apply by email to HRind-personnel@ hannover-re.com.

hannover **re**®

Gain a global perspective

Milliman is seeking actuarial professionals with strong technical, actuarial modelling and communication skills to join our Life practice based in Gurgaon.
This is an opportunity to collaborate with our team of experts from across the world in a fast paced, challenging, and rewarding environment.

REQUIREMENTS

- 1-4 years of life insurance experience
- Strong technical and actuarial modelling skills
- Excellent communication skills
- Demonstrable progress through exams
- Project management skills
- Driven and self-motivated

GET READY TO MAKE A DIFFERENCE
Please upload your applications along with a detailed Curriculum Vitae at https://tinyurl.com/4t7dhu8u

Shortlisted candidates will be invited for an interview in March/April 2022.
For more information about Milliman, please visit: in.milliman.com

Milliman

GENERAL INSURANCE CORPORATION OF INDIA
(A Government of India Company)
'SURAKSHA', 170, J.TATA ROAD, CHURCHGATE, MUMBAI 400020

APPOINTMENT OF ACTURIAL APPRENTICE

Applications are invited for the appointment of Actuarial Apprentices

Total Number of vacancies: 10 (For both streams of Non-Life & Life depending on the requirement of the corporation)

Eligibility Conditions: as on 31.03.2022

Age: 21 years (completed) and not more than 27 years i.e. candidate should have been born not earlier than 31.03.1995 and not later than 31.03.2001 both days inclusive, relaxation up to 30 years for OBCs and 35 years for SCs/STs. Age relaxation for PWD candidates is as per rules.

Qualification:

I. Graduation/Post Graduation in Science from recognized University with Mathematics or Statistics as main subject with 60% or more marks in aggregate, or

ii. Graduation / Post Graduation in Commerce from recognized University with Statistics / Actuarial Science as main subject with 60% or more marks in aggregate, or

iii. Graduation in Arts with Actuarial Science as major subject from recognized University with 60% or more marks, or

iv. Post-graduate Diploma in Actuarial Science with 50% or more marks

(10% relaxation in marks for SC/ST candidates).

AND

The candidate should have passed at least 2 actuarial subjects of exam conducted by Institute of Actuaries of India (IAI) or Institute and Faculty of Actuaries (IFoA).

Selection Procedure: Selection procedure shall be by way of personal interview

Application Procedure:

- Interested candidates may apply in the prescribed application form.
- Attach self-attested copies of the Caste Certificate (wherever applicable), School Leaving Certificate/Matruculation Certificate showing Date of Birth or Birth Certificate separately, Degree Certificate & Mark-sheets, Certificate of the Actuarial papers passed
- Affix passport size photograph at the right hand top corner of the application.
- Then send the scan copy of the application along with the other required documents to the email id recruitment@gicofindia.com

Detailed Ad & application form is available on our website www.gicofindia.com
Last Date of submission of application - 22nd April 2022

Deputy General Manager (HR)

NOTICE

February 05, 2022

Annual Membership fees for the financial year 2022-23

A) Due Date: 1st April 2022

B) The Annual Membership fees: with effect from 1st April 2019:

Class of Membership	Fees in Indian Rupees(INRs)
Fellows and Affiliates	9,000+(18% GST) = 10,620
Associates	3,000+(18% GST) = 3,540
Students	2,000
For Fellows, Affiliates and Associates above age 60 as on 1st April, 2022, and not gainfully employed in profession or practice or medically unfit to be gainfully employed in profession or practice.	2,000+(18% GST) = 2,360 (Accepted through offline mode along with application)
Life membership (optional) who are more than 60 years as on 1st April, 2022	Ten times the normal Annual Membership as mentioned above. (Accepted through offline mode along with application)
Members more than 75 years of age as at 1st April, 2022	No Annual Membership
Change of Category within an Annual Membership year	Will attract full Annual Membership fees for new category

C) **Failure to make payment:** The payment should be made online on or before 1st April failing which membership will lapse resulting in to removal of name from the register of the Institute.

D) **Mode of payment:**

1) Online through Members Login (www.actuariesindia.org/login.aspx)
2) DD or Pay Order
3) Wire-transfer (for members residing outside India)

Note: For more details, kindly refer **Annexure 1**

E) **Reinstatement of Membership:** Reinstatement can be requested in accordance with the following terms and conditions.

Where Annual Membership fee is in arrears for less than one year, reinstatement will be made on payment of the current year Annual Membership fee.

Where Annual Membership fee is in arrears for more than one year, reinstatement will be made on payment of Annual membership fees amounting to the year in which the membership was lapsed and the current year Annual membership fees.

Note: For Fellows Affiliates and Associates

Members whose Annual Membership fee is outstanding after 1st April 2022 can apply for re-entry their names in the register of members by filling up the Annual Membership Renewal form and upload the same at the time of payment. All such applications are subject to approval of the concerned authorities.

F) **Help:** Kindly contact Mr. Sandeep Mahajan at sandeep@actuariesindia.org or at 022-62433337 / Ms. Nilima Kadam at nilima@actuariesindia.org or at 022-62433339 for further details on reinstatement of membership or any other matter relating to Annual Membership fee.

RNI No. MAHENG/2009/28427
Published on 1st of Every Month
Postal Registration No. NMB/180/2020-22
Posting Date: 7th of Every Month
Posted at Mumbai Patrika Channel
Sorting office Mumbai - 400001

Our VAC 2022 Partners

Diamond Partner

SBI Life — Apne liye. Apno ke liye.
LIC — भारतीय जीवन बीमा निगम — LIFE INSURANCE CORPORATION OF INDIA — Har Pal Aapke Saath
ICICI Lombard — Nibhaye Vaade
MarshMcLennan

Gold Partner

TATA AIA LIFE INSURANCE
MetLife
SBI general INSURANCE — SURAKSHA AUR BHAROSA DONO
sas
MAX LIFE INSURANCE
ORACLE

Silver Partner

accenture
Swiss Re
Institute and Faculty of Actuaries
SOCIETY OF ACTUARIES
pnb MetLife — Milkar life aage badhaein

Bronze Partner

Milliman
ICICI PRUDENTIAL LIFE INSURANCE
Universal Sompo General Insurance
SHRIRAM Life Insurance — YOUR PARTNER FOR PROSPERITY
CHARAN GUPTA CONSULTANTS PVT. LTD.
HDFC Life — Sar utha ke jiyo!
SCOR — The Art & Science of Risk
Munich RE
WNS
LIFE GOALS. DONE. BAJAJ Allianz
IndiaFirst LIFE INSURANCE
CAS — 100 Years of Expertise, Insight & Solutions
XCEEDANCE
Edelweiss Tokio life — zindagi unlimited

Green Partner

K.A. PANDIT

Photo Booth Partner

Star Union Dai-ichi Life Insurance

Awards Partner

kotak life

Resource Centre Partner

niva Bupa Health Insurance
STAR Health Insurance — Personal & Caring — The Health Insurance Specialist