



# Institute of Actuaries of India

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28<sup>th</sup> November, 2012

**M Karunanidhi**  
**President**

## Foreword

### Off-shored actuarial work in India – A Survey Report

I am happy to present the Survey Report on Off-shored Actuarial Work in India and am sure it reveals useful information for the Off-shored units carrying out the actuarial work across all such functions from different places within India.

The Institute of Actuaries of India, in its endeavour to understand the actuarial off-shoring, carried out a survey by identifying such units and its functions. Out of 21 + units, 16 contributed to the Survey. The report reveals number of insights that would help identify areas where the Institute may be able to support professionally the members in building required capabilities and assist the Off-shored units in the best possible way. Various suggestions made by the participating units are going to be very useful in this regard.

I thank all the participating units and the staff of the Research Department who worked hard to have the survey completed on time.

M Karunanidhi



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## Off-shored actuarial work in India – A Survey Report

### Introduction

This report is based on the results of the Survey carried out by the Institute during October, 2012.

### Objective of the Survey:

To collect information about units carrying out actuarial work relating to countries other than India so as to formulate strategies for supporting actuarial human resources working in such units.

IAI believes that a formal strategy is need of the hour so as to ensure expansion of such units with high quality actuarial staff ultimately resulting into high quality work and service delivery.

### Definition

Off-shoring refers to transfer of work to India in respect of functions of companies outside India. This can be of different nature in relation to its complexity, technicality and skills. Under actuarial work, functions can be in relation to Insurance (Life, Non-life, Health & Pensions), Re-insurance (Life & Non-life) and/or actuarial Consulting.

### Background

India has been an off-shoring destination for actuarial work for many foreign companies over the last decade, mainly after opening up of Insurance sector in India and private insurers starting operations. The model for off-shoring is captive units set up by foreign companies as well as Indian companies set up for the purpose of carrying out such work for number of foreign companies.

The Institute of Actuaries of India (IAI) initiated a survey in October, 2012 to identify and understand the actuarial off-shored centers keeping in view of their requirement of actuarially skilled resources for the current and the future. There are 21+ off-shoring units involved in actuarial work and 16 of them participated in the survey (Appendix-1). The survey questionnaire, available in Appendix-2 collected relevant information on different structural and functional areas of participants along with suggestions on the prospective role of IAI in supporting the units in meeting their present and future challenges. Participants were given 3 weeks time to respond to the questionnaire starting from first week of November 2012. The survey questionnaire inter-alia requested for suggestions on issues and challenges confronted/ likely to confront by the units upon which IAI would act, a summary of which is available in Annexure-3.

The opening up of Insurance industry in India to private sector participation in the year 1999-2000 brought, besides number of insurance groups from different parts of the world, interests of number of entities: insurers and consultancies, to explore the possibility of actuarial work to be performed out of India. Primary motivations were cost and time efficiency: lesser cost and time differential advantages. Both these aspects resulting into higher profitability with better client satisfaction, at least in terms of time response required for service delivery.

In the backdrop of India based success stories of IT and IT enabled services encompassing service oriented industries mainly in the western hemisphere, came over to India the client servicing from insurance and banking houses mainly from the western hemisphere. In this background, starting with just two units and about 50 or 60 actuarial employees in about the year 1999, some twelve years later on India now has 21 + units with some 1,300 + actuarial employees performing actuarial off-shored functions coming over from just all the parts of the globe.

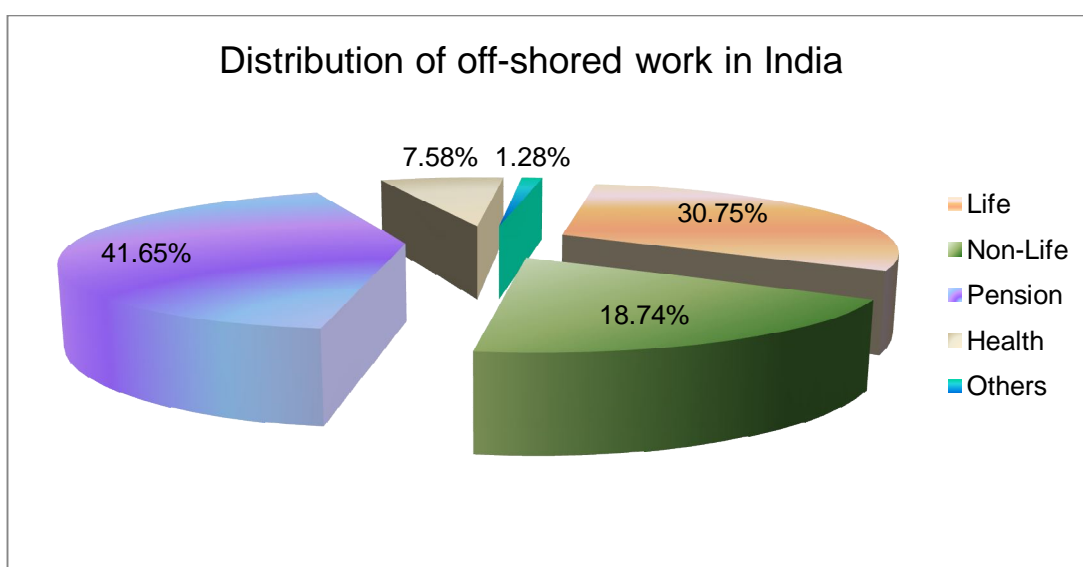
The survey in which 16 units (out of some 21+) participated has revealed that there are 1300+ actuarial resources engaged in off-shoring business, the average duration of their existence in India is 6 years and bearing an average team size of 73 actuarial members as on date. Some of the units carry hundreds of members and are likely to expand further. There are 1174, almost all members pursuing actuarial examinations from Institute of Actuaries of India or other professional bodies outside India, mainly from Institute and Faculty of Actuaries, UK , Casualty Actuarial Society in the US or Society of Actuaries, US.

## Off-shored Actuarial work - An overview

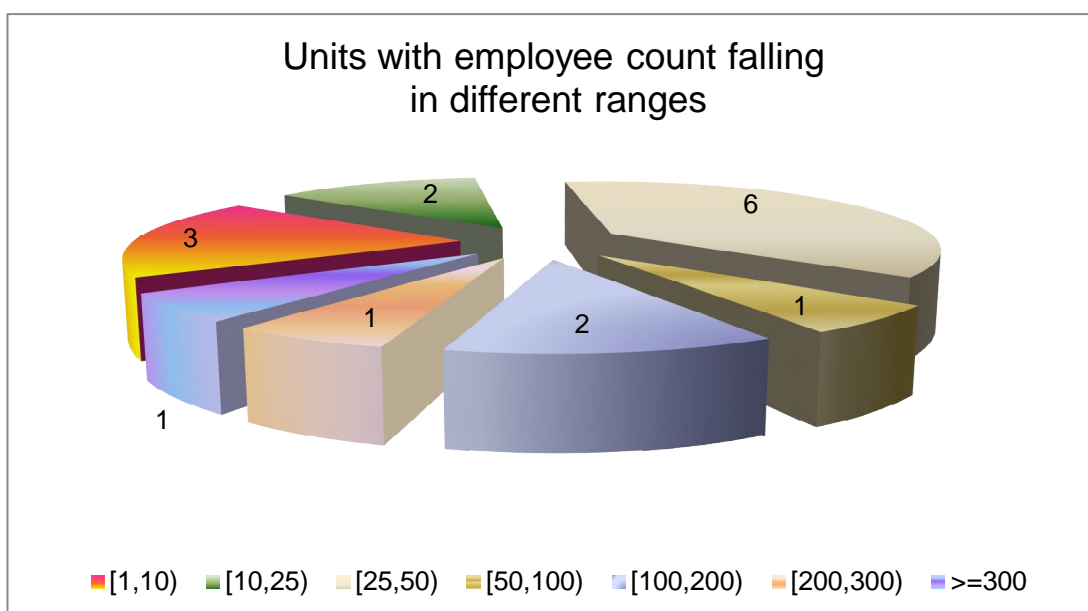
**Preferred places:** Most of the units are located out of Gurgaon, Mumbai, Chennai, Bengaluru and Pune.

**The actuarial functions:** Actuarial functions undertaken by off-shored units are into different functional areas, dominantly from Pensions with involvement of 41.65% of resources. Many units offer multi-functional off-shoring mainly in insurance areas of Life, Non-life, Pensions, Health and Experience analysis and undertake Reporting, Valuation, Product development, Pricing, Planning. There are units involved in multi-functional areas of work in different combinations.

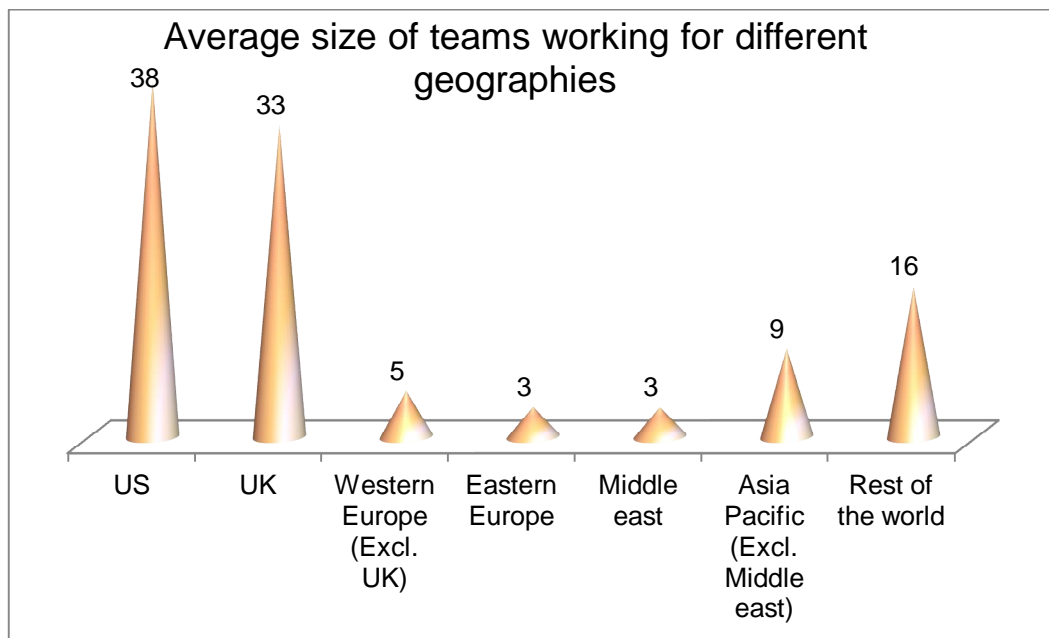
There are units that are predominant in Pensions and have developed big teams having hundreds of members who are trained and are capable of doing pension fund valuations across geographies.



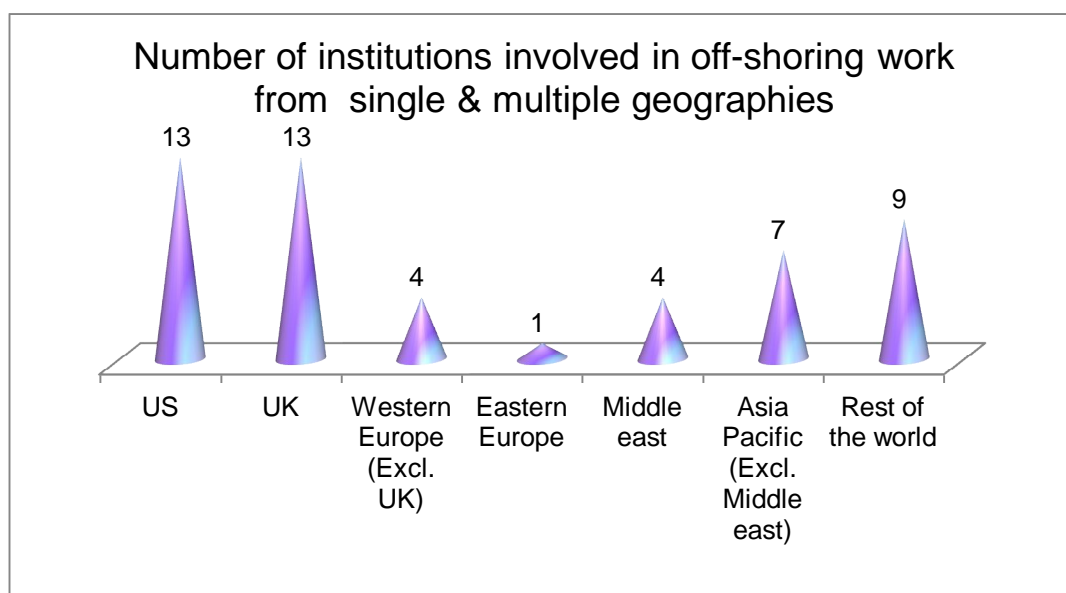
**The actuarial human resources:** The number of employees working in different units ranges from interval [1,10) to  $\geq 300$



There are 6 units with employees in the range of [25,50), however, there are 4 units employed more than 100 employees which take the average team size of a unit to 73. This probably indicates the volume of work they undertake and the expertise and reliability they have developed in delivering quality actuarial work. Approximately 80% of the work relates to the US and the UK.

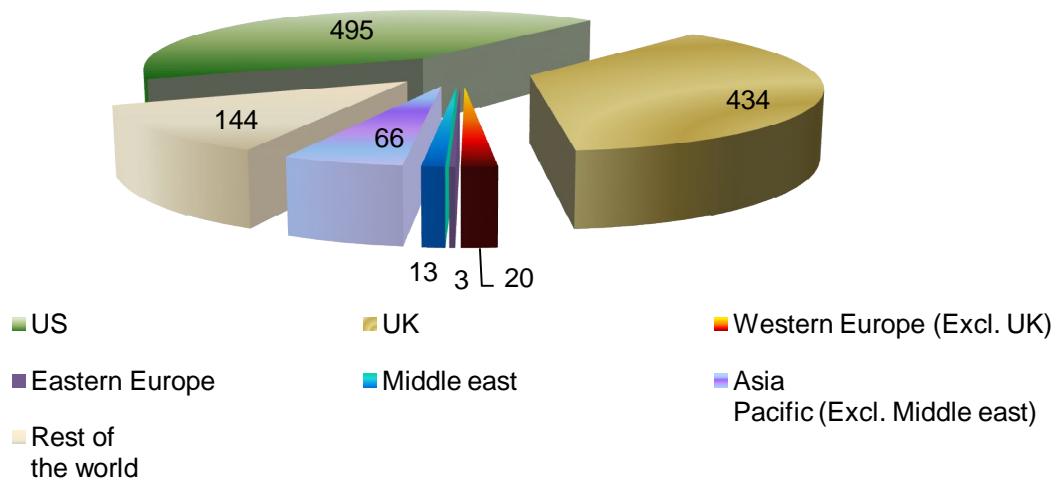


The overall sizes of actuarial employees related to US companies exceed that of UK based work by a small count. Average sizes of teams working for different geographies range from 3 to 38, whereas average size of the team for Pensions is 85. This leads to infer that US geography and Pension fund valuations are dominant among the off-shored actuarial work in India.



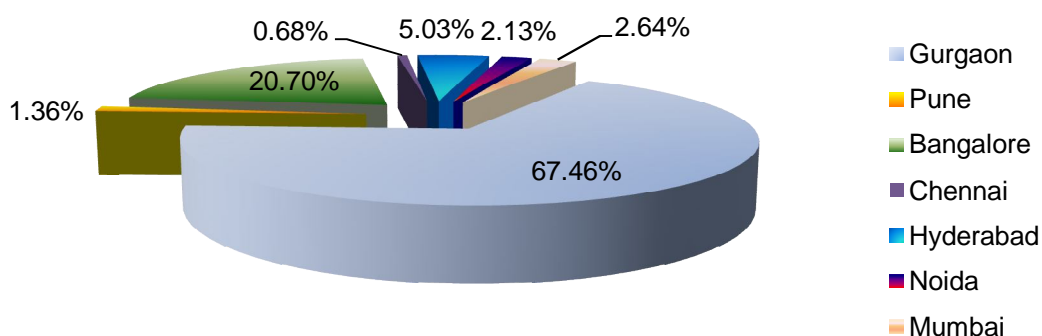
Out of all 16 units, 13 are involved in US related actuarial work and the same count holds for UK as well.

## Employees working for different geographies

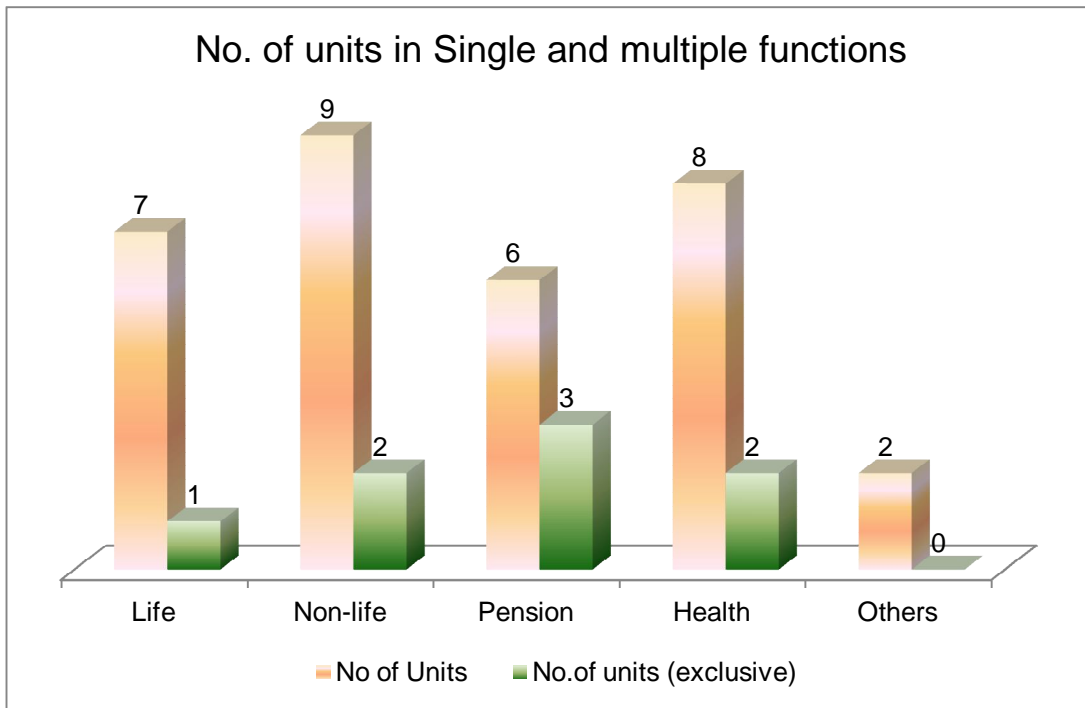


There are 3 units exclusively doing US related actuarial work, mainly pension fund valuations. Out of 2 such units doing UK related work exclusively involved in Pricing Group business and Pension valuations. On the other side, units are generally involved in multiple functions, however, there are units exclusively involved in each of the functional areas.

## Employee distribution in India-Percentages



Out of 1174 employees working in 16 units participated in the survey, locations Gurgaon and Bangalore are leading towns with 792 and 243 employees respectively and rest of them are scattered in locations Hyderabad, Mumbai, Noida, Pune and Chennai in descending order of count.



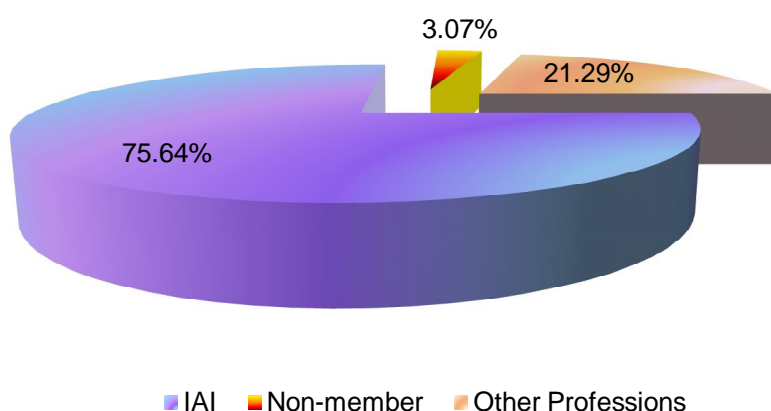
**The actuarial Functions:** Under each of the key functional areas, more significant activities include Valuations, Reporting, Reserving, Business planning, ALM and experience analysis. Technical supports such as prophet modeling and model validations are also a part of work to some of the units. There were references of work related to Modeling of Economic capital under Solvency-II, Catastrophic modeling, Predictive modeling and re-insurance strategy by some of the units.

Business	Main Activities
Life	<ul style="list-style-type: none"> <li>• Valuation-GAAP</li> <li>• Reporting-IFRS,GAAP</li> <li>• Pricing-Group schemes</li> <li>• Experience analysis</li> </ul>
Non-life	<ul style="list-style-type: none"> <li>• Pricing</li> <li>• Claims Reserving</li> <li>• Capital modelling</li> <li>• Reporting</li> <li>• Business Planning</li> <li>• Experience analysis</li> </ul>
Pension	<ul style="list-style-type: none"> <li>• Valuation</li> <li>• Business Planning</li> <li>• ALM</li> </ul>

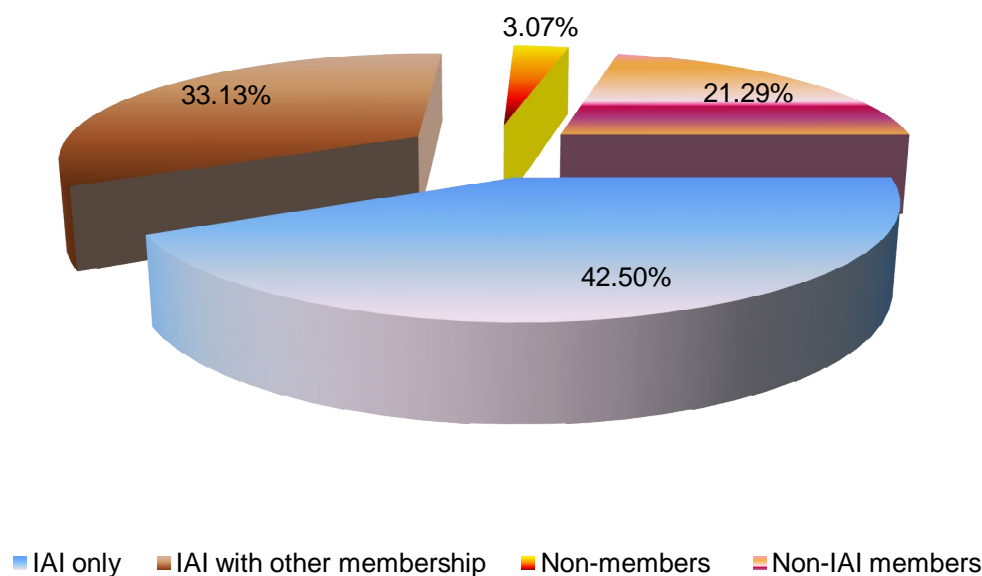
**Professional membership:** employees pursue actuarial studies mainly from Institute of Actuaries of India, Institute and Faculty of Actuaries, UK, Casualty Actuarial Society in the US and some from Society of Actuaries in the US. There a quite a good number of students who are members of more than one actuarial profession.

There are quite a good number of employees with dual membership in IAI and IFA. However, out of all employees identified with off-shored actuarial work, 75.64% are members of IAI irrespective of their membership in other bodies. When we separate out IAI dual membership further into single and dual memberships, it is observed that 33.13% are dual members mainly sharing IAI and IFA memberships and 42.50% have single membership of IAI. In counts, it comes to 499 and dual membership counts to 389.

Member ship distribution- IAI and other bodies  
(mutually exclusive)



Membership proportions in actuarial professions





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**Expectations from the Institute:** In response to the question, "Mention and explain top three ways in which you think IAI can assist you to develop actuarial resources in a better way", the following came up from many of the 16 units;

## Summary of suggestions;

1. Off-shoring centres focussed on actuarial services related to may require qualification from CAS and/or SOA. If IAI have mutual recognition with professional bodies in US, candidates may find it easier to qualify IAI and CAS/SOA together. Arrange knowledge sharing sessions with other relevant professional bodies, mainly with SOA, CAS, Institute and Faculty of Actuaries, UK.
2. More seminars related to the off-shore space (rather than just the Indian domestic actuarial industry. Training in advanced actuarial reporting and modelling concepts by conducting seminars and classes. IAI may organise more Seminars related to General Insurance.
3. Off-shoring environment require skills beyond actuarial concepts and talents which include people management, client management, project management and making business propositions etc., we may need an actuarial curriculum and certifications for developing these areas.
4. Sensitizing the actuarial community abroad about the capability of the actuarial talent.
5. Improve Knowledge Sharing, Encourage Research (funding research through industry tie-ups or government grants), Provide articles and research papers on website, Bring more focus on non-life insurance. Collaborating with different insurance companies and introducing a compulsory Internship program where experience becomes necessary for attaining levels of qualification.
6. Program for professional development of student community, facilitate increased interaction between the industry and students.
7. Providing inputs in regulatory developments in UK/Europe/US markets by publishing articles and reading materials. Representatives of outsourcing industry should be made part various IAI councils e) enhance positioning of the actuarial profession by participating in various solutions oriented activities at government level.
8. Students consider life to be the most important specialization, increased awareness of the other areas where Actuaries support and the advantages thereof. Encourage students to involve in other areas as well.
9. Improve the frequency of offering exams (CT9 especially).
10. Information dissemination on developments in the areas of Insurance, actuarial profession and other financial industry within and outside India.
11. Include risk management, stochastic modelling, and capital modelling topics in syllabus.
12. Evolve an examination system which is Consistent and leading students to increase trust and confidence.
13. Workshop for Actuarial students, Online Forum to discuss technical challenges, Training sessions on popular actuarial software like Prophet, Moses, Emblem and others.



14. Having more classroom tutorials for different subject in different cities and collaborating with different universities and taking out specialized full time and part time courses where a candidate can become eligible for exemptions for exams on successful completion of the course.
15. Helping create opportunities for actuarial resources in fields like banking, Investments, risk analysis etc. which are not currently developed in India.
16. More networking events with knowledge sharing as a purpose rather than CPD and Recruitment
17. Involvement of key employers in decision making process related to examinations and conferences. Focus and liaise with employer's rather single individual just because they are qualified.
18. Revisit the education strategy to prevent brain drain.
19. Control the marketing of actuarial education. There are lots of institutes misguiding the prospective students. I think IAI can do much better with focus career development.
20. A thought process: as we just want actuaries or want to actuaries with commercial and leadership skills.
21. If a database can be maintained about the students and their work areas. This will be helpful in identifying the right talent.
22. Improve Quality of people. Step has already been made by the introduction of Entrance test ( i.e. ACET)
23. Control somehow mushrooming of private coaching centres. Qualified people should be encouraged to teach students and they should get CPD credits. We can tie up with good colleges.
24. Introduce compulsory internship after CT series. This will ensure that we do not have a situation where students are very high on actuarial exams but no practical experience. We have seen students who are CA's and have 10 -11 actuarial exams with zero knowledge of basic Microsoft tools.
25. Encourage and support publication of thought-ware in leading international journals and magazines.
26. Organize industry related seminars with topics which are relevant not only from the perspective of the Indian market but also from the perspective of actuarial organizations which support local and global markets.

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**28<sup>th</sup> November, 2012**



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## Annexure-1 Institutions participated in the Survey

Sl. No	Units
1	Mercer Outsourcing
2	WNS Global Services Pvt Ltd
3	AXA Business Service Pvt Ltd
4	Aon Specialist Services Pvt Ltd
5	Arrowpoint Technologies Pvt. Ltd.
6	Ernst & Young GSS
7	Swiss Re shared services ( India) Ltd
8	XL India Business Services Private Limited
9	Deloitte Consulting India Pvt. Ltd
10	Milliman India Private Limited
11	Genpact
12	Metlife GOSC
13	Jardine Lloyd Thompson India Pvt Ltd (JLT)
14	McKinsey
15	RSA Actuarial Services Pvt. Ltd.
16	KPMG



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## Annexure-2 Survey Questionnaire

### Questions:

1. Name of the Institution :
2. Location of office and address;
  - a) Main office :
  - b) Name of other place/s where office/s are located in India :
3. Name of the key contact person with e-mail and Telephone :
4. Date of start of work at the main office :
5. Name of Countries for which the actuarial work is being carried out :
6. For each of the places under Q 2 above, please tick the functional area/s in which the work falls and mention the number of actuarial employees as at 30<sup>th</sup> September, 2012;
  - a) Life Insurance :
  - b) General insurance (P&C or Non-life) :
  - c) Pension :
  - d) Health :
  - e) Others (Specify) :
7. In case the centre is supporting multiple lines, Percentage of employees in each category:
  - a) Life Insurance :
  - b) General insurance (P&C or Non-life) :
  - c) Pension :
  - d) Health :
  - e) Others (Specify) :
8. In case the institution is supporting multiple lines, Percentage of employees in each category (total is 100%):
  - a) Life Insurance :
  - b) General insurance (P&C or Non-life) :
  - c) Pension :
  - d) Health :
  - e) Others (Specify) :
9. In case the institution is supporting multiple lines countries, Percentage of actuarial employees supporting each of the main regions:
  - a) US :
  - b) UK :
  - c) Western Europe (excluding UK) :
  - d) Eastern Europe :
  - e) Middle-East :
  - f) Asia Pacific (excluding middle-east) :
  - g) Rest of the world :



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10. For each of the actuarial professional bodies below, mention the number of employees as members (it is understood that some employees may be members of more than one body, in which case mention under each).

- a) Institute of Actuaries of India (IAI) :
- b) Casualty Actuarial Society in US (CAS) :
- c) Institute and Faculty of Actuaries, UK (IFA) :
- d) Society of Actuaries, US (SOA)n :
- e) Institute of Actuaries of Australia (IAAUST) :
- f) Any other (Specify) :

11. Whether any Actuarial examination study policy is in place for employees: Y/N

12. Key areas where support is provided and comments about nature of support

- a) Product development and pricing :
- b) Valuation :
- c) Reporting :
- d) Capital modelling (DFA) :
- e) Business planning and projections :
- f) Investments :
- g) Experience analysis :
- h) Others :

13. Mention and explain top three ways in which you think IAI can assist you to develop actuarial resources in a better way;

- a)
- b)
- c)