e-Insurance Trend with Benefit Illustration in a Cloud Computing Environment

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ABSTRACT
e-Insurance Account form is an upcoming technology in India which acquires policyholder's previous policy data (from any other Insurance company) to check whether he may apply for the new policy again. Therefore, a cloud-based network enables each of the Insurance companies to communicate within themselves in a secure manner. Benefit Illustration (BI) is detailed calculation measure which allows the client to see the comparisons between each of the client's interested company's policy plan and also provides him with a best suitable plan. Many a times client needs to interact directly with a financial advisor (expert) in case of susceptible doubt or most of the times for the assurance of the policy. Various ways such as face-to-face communication, telephone interaction and video links are being provided for a better intercommunication. Search engine is another way for a client to check the policy plans of a specified company- this would direct the client towards the company's website. BI, expert interaction and search engine are collaborated into one application called InsuranceApp, which is then provided to the client in the cloud – SaaS (Software-as-a-service).

Keywords
Cloud computing, e-Insurance, Benefit Illustration, InsuranceApp, search engine, expert advisor, SaaS

1. INTRODUCTION
The history of insurance in India is deep-rooted. Since the earliest times insurance has been carried out in some form or other. Insurance is a contract between the insurance company (insurer) and the policyholder (insured). In return for a consideration (the premium), the insurance company promises to pay a specified amount to the insured on the happening of a specific event. The need for insurance can b understood by considering an example. Ajay is 35 years old and works for an multinational corporation MNC. He has a ten-year-old-son, Vijay, whom he dreams will one day become a doctor. Ajay's spouse is a housewife, and his parents are retired and dependent on him. Ajay has a home loan and is making monthly investments for Vijay's higher studies and marriage and his own retirement. Ajay wants to ensure that Vijay gets the best of everything and that h himself is not dependent on Vijay during his retirement in that Ajay's parents are on him. So far everything is going well with Ajay's plans. But imagine what will happen in the following scenario.

One day while returning home from the office Ajay has an accident and dies. What will happen? Who will take care of the family, Vijay's education and marriage, the home loan, etc.? What are the options available to Ajay so that his family can be taken care of in his absence? Let's look at the scenario again and see how insurance can provide a solution. Here, Life Insurance provides protection to a family on the untimely death of the income provider. If Ajay has adequate life insurance cover, then he should die, the money received from the life insurance company can help to support his family. The insurance money will help to take care of the family's living expenses, Vijay's education and marriage, and the cost of the home loan, etc. Therefore, insurance can safeguard a person against unexpected events. Likewise there are several insurances according to the client's needs.

Finding your way through the different insurance policies can be really difficult task. But once you get the right kind of insurance policy lies and if it fits your budget too then you have won yourself a long-term peace of mind. Insurance companies often look similar, how do you know which is the best company for you? Profiles or websites give you good information on individual company specialties. But when it comes to choosing the best company along with the requirement and budget plan it becomes difficult to choose a specific company.

Here comes the need of cloud computing environment. All the information such as every insurance company's website details, their offered plans and policies, updates along with every plan's benefit illustration (BI) – a new feature, are gathered at one place called Cloud. Cloud storage has the capacity to store huge amount of data which is then made available to the client in a very efficient and less time-consuming manner when the client fires a query. This is efficient in a way such that when a client wants a comparison between various companies' plans he is not required to check each and every company's website. Instead, on just a single click all information along with suitable plan (for the specified client details) is made available quickly. It is not a time-consuming method because BI is calculated based on the client's specified information within a few milliseconds, instead of searching one plan at a time and calculating the benefits manually.

The above development motivated this study to design an application in a cloud computing environment which mainly gives client with proper comparisons among several insurance companies along with their plans and policies offered with the help of BI. Additional option as interacting with a financial advisor is made available in several ways. Also, e-Insurance account form gives the company as well as to the client the idea regarding previous policies to which client has been subscribed.

2. RELATED WORK
Cloud computing is generally broken down into three primary levels – SaaS (Software-as-a-Service), PaaS (Platform-as-a-service) and IasS (Infrastructure-as-a-Service). Figure 1 shows these three levels along with what tasks are handled by the user and the vendor at different levels. Cloud clients can access a cloud computing network through web browser, mobile app, thin client, terminal or emulator. Clients can directly access the SaaS service via some application such as CRM, email, virtual desktop, communication or games. The

service offering a platform, PaaS, consists of execution runtime database, web server, development tool, etc. Individual organization cannot afford resources to be used in a large amount such as virtual machines, servers, storage, load balancers, which the IaaS service can provide in a cloud computing environment.

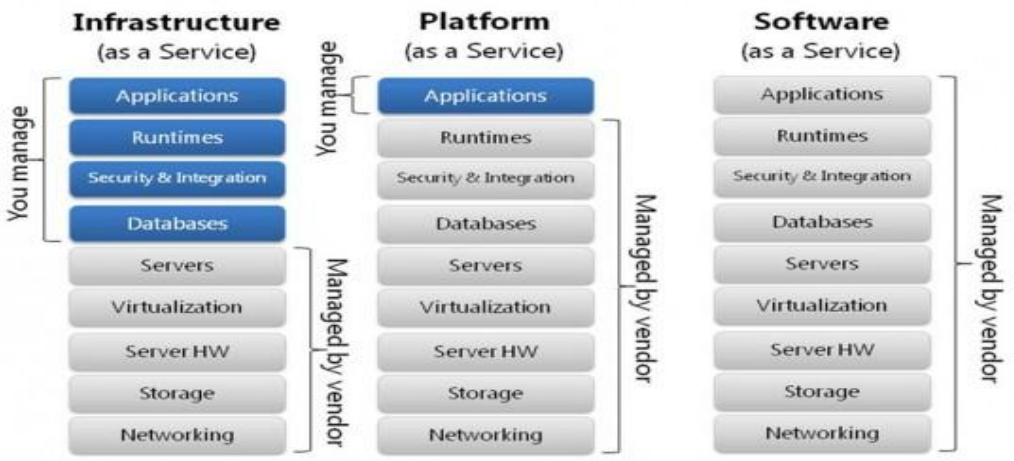


Figure 1: Three primary levels in cloud computing

SaaS – Software applications that are only available online fall into the Software-as-a-Service category. In this paper, we are using SaaS level service which will provide the end users with an application named, "InsuranceApp" which gives the comparison between companies based on their plans along with BI, interaction with an expert and a search engine.

3. METHODOLOGY

While using SaaS as a level of cloud computing, clients will be provided with the following three services:

- Application that compares plans and policies among all the Insurance companies with benefit illustration associated with each plan and giving the convenient communication for the client by an expert
- E-Insurance Account form which will show the user existing policies to which he is being applied. This information is extracted by communicating between all companies in a cloud.
- A search engine is provided for a client to get more details about the specified company in case where client needs overall knowledge.

3.1 InsuranceApp – An app through SaaS

As we have seen, SaaS provides an application to the end user connected in a cloud. Initially, the InsuranceApp will ask the user to fill up the information regarding him such as name, age, gender, annual income, family members, phone number, email id and region. Depending on this information(mainly on the income) at the next stage he will be given the list of all best suitable plans along with its BI.

3.1.1 Comparison among Insurance Companies

There are total 24 Insurance companies in India, namely – Life Insurance Corporation of India, HDFC Standard, Max New York, ICICI Prudential, Kotak Mahindra, Birla Sun, Tata AIG, SBI, ING Vysya, Bajaj Allianz, Met Life India, Reliance, Aviva, Sahara India, Shriram, Bharti AXA, Future Generali India, IDBI federal, Canara HBSC OBC, Aegon Religare, DLF Pramerica, Star Union Dai-ichi, IndiaFirst Life Insurance Company Limited.

Comparison among these will be made based on the client's specified annual income and age and the desired plans for the client is listed. Figure 2 shows the comparison chart based on the income and age.

Figure 2: Comparison chart on plans

The plan based on the age and the income varies from company to company. User just has to specify the age and the income and then he will get the filtered results showing the list of plans.

For instance, suppose the current age of Ajay is 30yrs and his annual income is 2 Lac. Based on this information Ajay will get a list of only those plans along with companies which he can afford (calculated on income and savings) and as his age is not more he will get plans related to this age. For example, he may take a life insurance plan but a person at age 65 could not b granted such policies because it may cause a high risk to the Insurance company.

3.1.2 Benefit Illustration (BI) – Comparison among policies

When provided with the list of all suitable plans, now user just has to click on the plan (not actually taking a policy), he will be given a benefit illustration chart which will consist of plan name, policy benefit period, premium payment term, premium mode, monthly income, sum assured, benefit up to age, end of

policy year, annual premium, on death, survival/maturity, surrender, etc. figure 3 and figure 4 shows an example at a particular instance.

3.1.3 Interactive Expert/Financial Advisor

User may come across certain doubts which may need an Expert talk. Expert talk is basically required in to cases

- If user does not understand any policy or a plan, he may take an advice from an Expert.
- Even if user understands the policy or a plan, but is yet to be satisfied, he may again need to reconfirm the plan before investing his money.

There are three ways of interacting with an Expert or a financial Advisor:

- Face-to-face
- Telephonic
- Video links

We have introduced a new interaction technique "video links" in our paper which can be seen as a most convenient way of understanding the plans and policies. For certain plans, videos of an Expert are provided which will contain total explanation of policy along with the calculations done step by step. This calculation will be a policy plan showing premium that the client will be paying, its sum assured at the end of the policy (maturity), its bonus gained every year and mainly its benefit. In face-to-face approach, user needs to specify his address and appointment time with a financial advisor to give him a visit. While in telephonic interaction method, user is provide with a phone number of some Expert (expert at a specified plan).

3.2 e-Insurance Account Form

e-Insurance is a new feature introduced in India this year. This paper will provide the users to login with his/her e-Insurance account form, which will be the step towards taking a new online policy. The main task of the e-Insurance is to keep coordination all 24 Insurance companies. From the cloud point of view, our cloud consisting of these companies can communicate among them when it comes to taking a new policy.

Consider a user has already taken a policy from HDFC Life Insurance Company and now is applying for another policy in Bharti AXA Life Insurance Company. Before applying for the new policy, Bharti AXA asks to all the companies that whether this user has taken any policy from any of the company? HDFC gives all the details of the user to Bharti AXA. Now, Bharti AXA calculates whether the user is able to take another policy (again based on age and income). If yes, company allows the user to proceed up with filling the form or else stops and offers some other suitable policy for him (within his age and budget).

3.3 Search Engine

Search Engine is an option provided for the user only when the user is not satisfied with comparison within InsuranceApp. By specifying a query into a search engine, the client is connected to the respective Insurance company websites.

4. RESULTS PREDICTED

As per the user's specified details, firstly the companies having such requirement-based plans are retrieved. Among those plans user when tries for the policy comparison, he gets the benefit illustration chart. For instance, Bharti AXA takes an input from the user Ajay, shown in figure 3. After entering all details he clicks on the "calculate" button. As shown in figure 4, the benefit illustration chart is acquired through which comparisons are made among other policies.

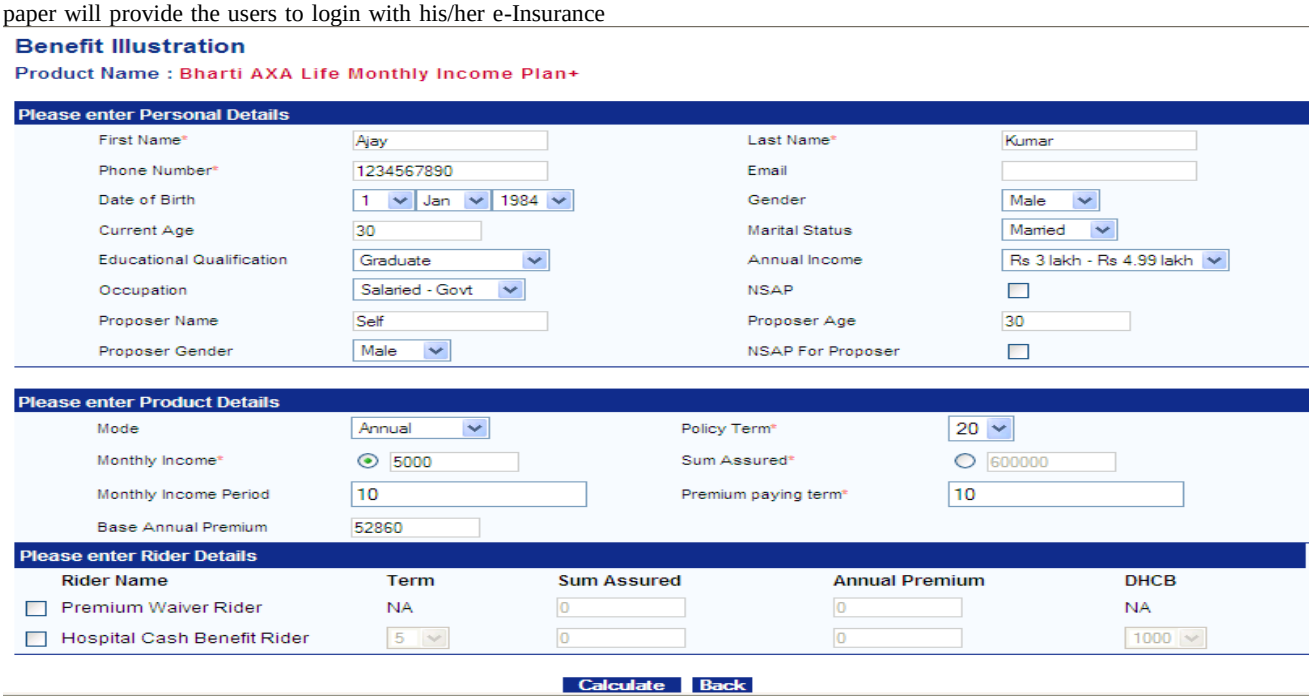
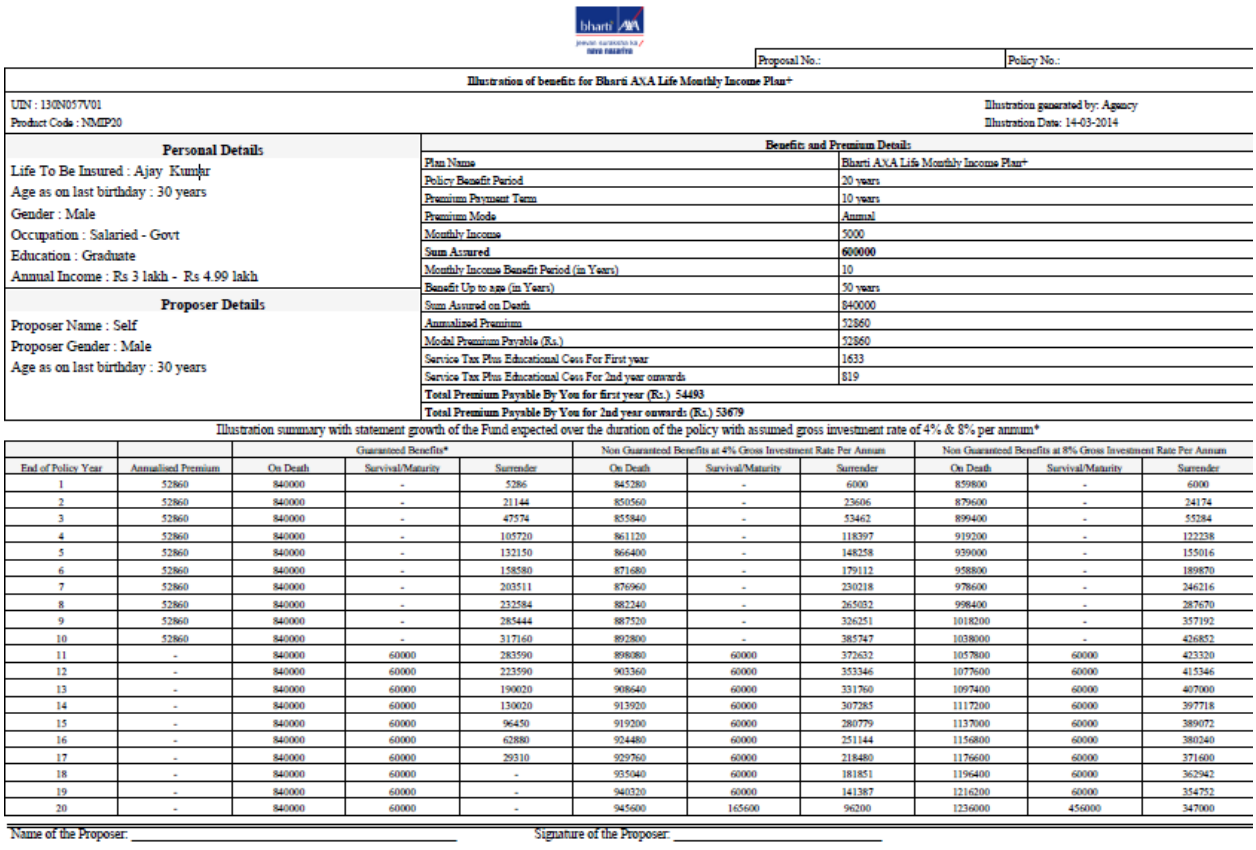


Figure 3: Information required for BI



Proposal No.: Policy No.:

Illustration of benefits for Bharti AXA Life Monthly Income Plan+

UIN : 130N057V01
Product Code : NMIP20

Illustration generated by: Agency
Illustration Date: 14-03-2014

Personal Details

Life To Be Insured : Ajay Kumar
Age as on last birthday : 30 years
Gender : Male
Occupation : Salaried - Govt
Education : Graduate
Annual Income : Rs 3 lakh - Rs 4.99 lakh

Proposer Details

Proposer Name : Self
Proposer Gender : Male
Age as on last birthday : 30 years

Benefits and Premium Details

Plan Name	Bharti AXA Life Monthly Income Plan+
Policy Benefit Period	20 years
Premium Payment Term	10 years
Premium Mode	Annual
Monthly Income	5000
Sum Assured	**600000**
Monthly Income Benefit Period (in Years)	10
Benefit Up to age (in Years)	50 years
Sum Assured on Death	840000
Annualised Premium	52860
Modal Premium Payable (Rs.)	52860
Service Tax Plus Educational Cess For First year	1633
Service Tax Plus Educational Cess For 2nd year onwards	819
Total Premium Payable By You for first year (Rs.) 54493	
Total Premium Payable By You for 2nd year onwards: (Rs.) 53679	

Illustration summary with statement growth of the Fund expected over the duration of the policy with assumed gross investment rate of 4% & 8% per annum*

		Guaranteed Benefits*			Non Guaranteed Benefits at 4% Gross Investment Rate Per Annum			Non Guaranteed Benefits at 8% Gross Investment Rate Per Annum		
End of Policy Year	Annualised Premium	On Death	Survival/Maturity	Surrender	On Death	Survival/Maturity	Surrender	On Death	Survival/Maturity	Surrender
1	52860	840000	-	5286	845280	-	6000	859800	-	6000
2	52860	840000	-	21144	850560	-	23606	879600	-	24174
3	52860	840000	-	47574	855840	-	53462	899400	-	55284
4	52860	840000	-	105720	861120	-	118397	919200	-	122238
5	52860	840000	-	132150	866400	-	148258	939000	-	155016
6	52860	840000	-	158580	871680	-	179112	958800	-	189870
7	52860	840000	-	203511	876960	-	230218	978600	-	246216
8	52860	840000	-	232584	882240	-	265032	998400	-	287670
9	52860	840000	-	285444	887520	-	326251	1018200	-	357192
10	52860	840000	-	317160	892800	-	385747	1038000	-	426852
11	-	840000	60000	283590	898080	60000	372632	1057800	60000	423320
12	-	840000	60000	223590	903360	60000	353346	1077600	60000	415346
13	-	840000	60000	190020	908640	60000	331760	1097400	60000	407000
14	-	840000	60000	130020	913920	60000	307285	1117200	60000	397718
15	-	840000	60000	96450	919200	60000	280779	1137000	60000	389072
16	-	840000	60000	62880	924480	60000	251144	1156800	60000	380240
17	-	840000	60000	29310	929760	60000	218480	1176600	60000	371600
18	-	840000	60000	-	935040	60000	181851	1196400	60000	362942
19	-	840000	60000	-	940320	60000	141387	1216200	60000	354752
20	-	840000	60000	-	945600	165600	96200	1236000	456000	347000

Name of the Proposer: _____ Signature of the Proposer: _____

Figure 4: BI chart based on figure 3

After the interaction with an expert, client is much satisfied. Face-to-face communication requires the appointment to be fixed between client and the expert. In a telephonic interaction, client has many expert person options. Video links associated with each plan shows the calculation of a plan every year, its sum assured along with the bonus and the premium to be paid. E-Insurance account form shows the already taken policies within a same company or in other companies. It has a format like Personal information of the policyholder, Insurance company name, dates (first premium and sum assured), etc

5. CONCLUSION

InsuranceApp if used saves the time of the customer who is willing to take policy and is confused or unknown of the Insurance companies present and their plans offered. This app is not a time-consuming app as all companies are included in a cloud and therefore, it is faster to retrieve the plans and compare between them.

Calculation of client's BI gives a clear and accurate explanation in a systematic way which clears out many of the doubts. And once the client has found the beneficial plan, he proceeds further. Calculating each and every plan manually is time-consuming. As a result, BI plays here an important role.

We have introduced three convenient ways in interacting with a financial Advisor in case if client wishes to clear out some of his doubts. These can be face-to-face, via telephone or through video links.

Our new technology, e-Insurance company form comes up with a new feature showing the client already about the policies he is holding and what risks are associated even if he tries to take another policy.

Finally, we provide a search engine which will be rare requirement because already user gets an clear idea about each plan through the above mentioned points. Though user has understood every policy and plan, he may still like to visit each company's website, so for cases search engine has been taken into consideration.

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