Use of Information Technology in Insurance Industry

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The purpose of this article is to understand and highlight the importance of Information Technology in the Insurance Industry. The insurance industry is changing at a faster pace than any other industry, and, with the help of Information Technology it is able to maintain the momentum. In information technology enables the insurance industry on multiple verticals and continues to make the persistent growth for a sustainable future.

Keywords: Information Technology, Communication, Insurance, Sustainable, Computer Technology

Introduction

The Insurance Industry has witnessed significant growth ever since its liberalization in the year 2000. Even though the insurance penetration has increased to 3.69% in 2016-17, and the number of policies has crossed more than 43 crores in this period, the real potential of insurance sector in the country has not been fully realized. Given that the premium payment capacity would be limited for the low income segments, the costs of insurance services are kept to a minimum and at the same time viable to the insurers and the intermediaries. In this context, information and communication technology has a very important role to play in the growth of this sector.

The Insurance Repository system and the sale of electronic policies can bring down the costs of policy issuance, administration and servicing and make it much more simpler if it is truly integrated suitably with the one lakh Common Service Centres across the country. Information Technology using the electronic platform can facilitate faster and easier settlements not only for the policyholders but also mutually among insurance companies. To this effect, the Electronic Transaction Administration and Settlement System (ETASS) initiative of IRDAI will play an important role in the near future in the Co-Insurance and Reinsurance space. The insurance sector is data driven and analytics play an important role. Capture of data seamlessly and its processing can help the insurance industry to do better underwriting, reduce incidents of frauds and also identify the areas of focus for further insurance penetration and growth.

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Currently, insurance has a very close interface with other financial services that are provided by capital markets, banking and pension sectors. There needs to be synergetic efforts among these related sectors to ensure harmonious growth of services in the financial sphere. Information technology can not only improve the interface among these sectors but also provide the much needed push in dissemination of knowledge especially in the promotion of financial literacy and education among potential clients.

Definition

"Information technology (IT) is the use of computers to store, retrieve, transmit, and manipulate data, or information, often in the context of a business or other enterprise." (Daintith, John, ed. (2009), "IT", *A Dictionary of Physics, Oxford University Press)*

Information Technology is considered to be a subset of Information and Communications Technology (ICT). An information technology system (IT system) is generally an information, communication and computer system - including all the equipments which is generally operated by a limited group of experts.

Information Technology as a Concept

Human beings have been storing, retrieving, analysing and communicating information from the dawn of creation, but the specific term information technology in its modern sense first appeared in 1958 when in an article in the Harvard Business Review, Harold J. Leavitt and Thomas L.Whisler commented that "the new technology does not yet have a single established name. We shall call it Information Technology (IT)."

Their definition of IT covered three categories:

1. The application of statistical and mathematical methods to decision-making.
2. The simulation of higher-order thinking through computer programs.
3. The techniques for processing.

The term IT is commonly used similarly for computers and computer networks, but it also encompasses other information distribution technologies such as television and telephones/mobiles. Several products or services within an economy are associated with information technology, including computer hardware, software, internet, telecom equipment, and e-commerce.

Based on the storage and processing technologies employed, it is possible to distinguish four distinct phases in the development of IT: (a) pre-mechanical, (b) mechanical, (c) electro-mechanical and (d) electronic. This article focuses on the most recent (d) period (electronic), which began in about 1940.

Role of IT in the Insurance Industry

Role of IT in insurance has always been a critical one. Primarily, given the long-term nature of products sold, technology becomes a very key component for on-boarding, retaining and servicing customers. Whether it be the initial phases of centralized operations and service model adopted by the industry or the later shift towards decentralised model, technology has been a key enabler in this transformational journey. This has become all the more evident with the increased focus, amongst many other thrust areas, on need-based solution offerings to customers through financial need analysis, customer retention, cross-selling, fraud control and reduction in the cost of acquisition. Technology provides the insurance business with the combined power of centralized computing coupled with efficiency of distributed or decentralized decision making, thus delivering value to customers, shareholders and the community at large.

There has been 3 major changes in the technology approach, according to Srinivasan Iyyenger in his article "The Role of IT in insurance industry".

1. The opening up of internet as a medium to transact and shift in customer preference from "Ask" to "Seek" has been a boon. The opening up of avenues for buying policy online and seeking service resolutions on the web are classic examples of IT enablement. Here the customer is able to seek options for the best product/pricing, fill the forms online, get assessed on real-time basis and also get policy issued instantly. Multiple IT systems combined make this possible at the backend, thus ensuring that the customer gets a seamless and smooth experience of either buying a policy or getting it serviced. IT is already changing the way companies are looking not just to seek and retain customers but also help build alternate distribution models to drive growth. It would not be a wrong to say that this drive will have a major impact both on brand and business of the insurance companies.
2. The disengaging of the core from the periphery in terms of the nature of transactions. From a scenario of one system covering everything from quotes to claims, including the intermediate tracking of process, the landscape shifted towards segregating core transactions from the peripherals. This made it easier for the insurance businesses to innovate and implement new products and services faster whilst not compromising on the core.
3. An array of boutique offerings made it possible to proactively interpret customer behavioural patterns, deepen customer relationship management, fraud prevention and control and trend-based predictability. Companies have implemented advanced CRM solutions, which not only merely track customer interactions but also highlight insights or patterns on real-time basis, based on previous interactions. Analytical tool-based technologies enable companies to better predict the probability of renewal of premiums way ahead of the renewal or due dates. Besides, companies have used IT solutions that enable smarter decisions about the locations/profiles to focus on and identify those to shy away from, thus directly contributing to better profitability and customer management.

The de-materialization of policy contract, also called "e-policy", is taking the whole process a step further where a customer having multiple policies from multiple insurance companies can get them managed easily and from one place. Technology has also been redefining other critical areas within an insurance company like never before. Currently, the underwriting rule engines are more sophisticated in a way that it can recommend risk underwriting decisions based on fixed few and many variable parameters, just like an underwriter used to do earlier. Renewal and claims data models have been helping identify which customers need more follow up or which profiles seem suspicious when inter-layered with this geographical profile details. Video-based interactions directly with customer's at-boarding stage will help drive down medical costs and improve risk underwriting, besides enabling deeper insights about the customer.

In the article "Role of Information Technology & Insurance penetration: A study", Dr. C K Hebbar, Sandip S Shenoy, Guru Prasad Rao, Abhishek Rao rightly pointed out in that, Many companies have call-centres and the IVR integrated quite efficiently enabling most common interactions to be automated and the few subjective ones to be handled by the call-centre executive/s directly to provide customized resolutions, thus driving down cost, improve efficiency and reduce resolution time. Soon one would see a major change in the business model due to adoption of cloud technology by the businesses. With larger IT majors setting up India-specific data centres, it has become easy to adopt cloud technology comfortably and enable them to move from fixed cost to operating cost model on key IT investments. Smartphones have proliferated across all segments of the population. India is the fastest growing e-commerce market with strong payment gateway integration. This, coupled with personal and official data segregation on mobile devices, will truly help realize the dream of "the mobile is your everything", and yet ensuring that the level and ease of sales and service is the same, just like when one walks into any physical office of an insurance company. This is enabling businesses to plan deeper and faster expansion of business into the hinterland with lower incremental cost. This will also bring about cost efficiency for the insurance company and help spread the reach of insurance to all segments of the society across all locations in the country.

All these entail the use of information technology in the insurance business by way of:

1. Enterprise resource management through better data capture and management
2. Automated processes with various channel partners
3. Social media integration like internet sites, various portals
4. Comprehensive and integrated systems for customer information

The all-pervasive nature of technology has broken age-old barriers and the ways of doing business in the insurance sector and has encompassed almost all aspects of insurance business. Let us look at the significant impact of information technology in the insurance industry as explained by CA Purvi Parekh in her article "Role of IT in insurance industry".

A. Business and Regulator Reporting:

Information technology can be optimally leveraged in the reporting mechanism – an extremely crucial area. There is a huge potential within organizations to have a consistent methodology for data capturing and reporting mechanism. This will be advantageous to organizations:

a) In order to have meaningful dashboards;

b) To have access to various MISs at the click of a button;

c) To eliminate unwarranted reconciliations and duplications;

d) To introduce manual interventions to generate reports, if required.

B. Cost Efficiency and Operating Models:

To bring out the maximum potential of Value-Chain Analysis study in the insurance sector, insurers have been opting for automation at different levels or sub-levels down the value chain. IT-enabled processes lead to the maximum utilization of resources, thereby leading to cost savings and better operating margins. The ways in which these are achieved include the following:

a) Procurement processing, approval and payments are getting automated end-to-end without manual intervention, thereby saving time and cost for insurers;

b) With the introduction of information technology, insurers can opt for different operating models such as centralized, paperless set-up, distributed network, etc., to better manage economies of scale;

c) Operational processes are getting automated in the areas of inwarding, dispatching, issuance of policies through POS (Point of Sale);

d) Human resources automation entails areas of recruitment, transfers, relieving, employee reimbursements, leave management, post-retirement benefits and employee productivity.

C. Product Differentiation and Competitive Pricing

Information technology brings with it the ability to calculate varied combinations of customer data, geographical/demographic information of property and providing competitive quotes to clients. Data Mining/Business Intelligence tools are available, which:

a) Help in underwriting standard products almost immediately, based on the pre-defined rules;

b) Analyse trends or patterns observed and provide outputs for, say, motor underwriters to gauge the “driving pattern”, “driving circumference”, “time of travel”, etc., which enable them to determine the premium rates for different types of clients;

c) Analyse the past data and define the parameters, based on which specific premiums can be quoted.

D. Enhancing Customer Experience by Value-Added Services

The rule of sales is that a loyal customer is worth 10 times more than a potential buyer. Information technology plays a pivotal role in retaining existing customers as well as enhancing the customer base by providing technologically-enabled services, which make customers feel that the insurance company walks with them at all times.

IT can also enable insurers to provide futuristic customer-friendly services by way of:

a) The ability to carry health cards on mobile sets;

b) Payment of premium through "Mobile Wallets", wherein the premium, can be paid using the mobile technology;

c) Using technology to pin-point the nearest hospital or garage in case of an emergency or accident using GEO-location technology.

E. Fraud Detection:

With the introduction of the robust and state-of the- art IT systems, frauds can be detected and prevented at an early stage and investigated almost immediately as the alarm bells are set-off by the pre-defined fraud detection IT algorithms.

F. Unique Customer Base:

Information technology makes it possible for insurers to have a unique/ standardized customer base. The e-KYC (e-Know Your Customer) technology uses the authenticated database of the Aadhar Card portal and provides the demographics of the customers from the Central Identities Data Repository of Unique Identification Authority of India (UIDAI CIDR).This ensures that customer information is standardized and data entry of customers is altogether eliminated as the authenticated data from the Government of India's system directly flows from the UIDAI-CIDR to the insurer.

G. Business Operations:

An insurance company's internal business operations also rely heavily on information technology. Computers process the complex algorithms that result in actuarial tables, which are the charts that insurance companies use to set rates based on customers' levels of risk. Insurers also process their financial accounting, payroll, sales franchise information and budgets using computers and specialized softwares. With the foregoing discussion, we have to appreciate the important role that information technology plays in the smooth conduct of the insurance business.

H. Establishing New Businesses and Deeper Penetration:

Innovations in technology can help insurers to enter untapped markets without any geographical barriers. One classic example is the CSC (Common Service Centre), Model whereby through a common platform, which in turn, is integrated with various insurance companies, insurance can be extended to rural areas. Technology can be extended horizontally to encompass the overall distribution network of the channel partners rather than one company working in vertical silos. An existing arrangement of this type is the Point of Sale system at the office of the agents/brokers. Also, integration with the web aggregators can also be extended to the customer base of the insurer/s.

I. Mobile:

Just as in most other businesses, telecommunications technology has a significant impact on insurance business too. Customers who use smartphones with Internet connectivity can make payments from anywhere and report claims as soon as they mature. Smartphones and digital cameras also allow customers to take photographs of a damage, which can be useful in the case of storm damage to a home or an accident damage to an automobile that has an insurance policy cover. Mobile technology also allows insurers to send customers alerts notifying them of upcoming due dates for premium payments, reducing the likelihood of late payments and gaps in coverage. With the increased connectivity and ever-rising data transfer speeds, mobile telecommunications technologies will continue to enhance the experience of customers.

Technological Trends in the Insurance Industry

We are in a transition stage from industrial to an information society. In the present scenario, information technology has become the backbone of every industry, especially for the insurance sector. The Information Technology has a huge impact on the insurance industry and the unthinkable has become doable now. The insurance industry is giving importance to profitable growth. Through the use of innovative technologies this growth can be effectively increased. Following are the technological trends in the insurance industry as per Preethikumar in his article on "Impacts of Information Technology in Insurance industry".

1. Entry of Non-traditional Firms into the Insurance Industry

Non-traditional firms are entering the markets with the help of partnerships and alliances. Around 90% of the executives have the opinion that insurance companies will have alliances with non-traditional organisations to improve marketing.

Implications:

a) Customers will benefit the most with the increased competition in the industry. This factor will force complacent companies to provide better customer experience and service.

b) Because of the entry of new players into the insurance arena, competition will increase substantially

c) The smaller insurance firms will be impacted the most, as they will not be able to scale up their technology, infrastructure and competency to cope up with the entry of technologically better equipped big players.

2. Increasing Demand for Cyber Insurance

Though companies have installed effective information security divisions and several best practices to prevent cyber-crimes, it is impossible to ensure complete protection from cyber frauds. Cyber risk has been termed as a global threat by the World Economic Forum. The increased incidents in cyber threats is the prime reason for the current need and urgency for cyber insurance.

Implications:

a) Insurers can integrate cyber insurance products to the existing core systems

b) The nature of business and local regulations will have to be factored into while designing new products by the insurance providers.

c) During the policy administration and underwriting phase, insurers have to study the potential impact of cyber-attack and determine the pricing policy.

3. Auto Insurers are Shifting towards Usage-based Insurance

- It will enable insurers enhance claim-handling capabilities and perform better customer-segmentation service.
- Insurers have tested the concept and started introducing policies in some markets. Its adoption is expected to increase over the years.

Implications

a) New direct insurance start-ups to serve customers entirely via mobile and online touch points will emerge.

b) Insurers can have better segmentation of risk profiles and enhanced claim- handling capabilities.

4. Increased Use of Internet of Things by the Insurers

- The data transmitted by the IoT can further be analysed using data processing techniques for useful insights.
- In the insurance industry, the property and casualty line of business was the first to adopt IoT in the form of vehicle telematics.

- Reduction in the cost of sensors, improved communication methods and increased data processing power have enabled the widespread use of the internet of things.

Implications

a) Using IoT, insurers can closely analyse customers' data and identify their needs and risks.

b) Customers' health risk can be determined more correctly by using wearables.

c) Policy-holder service will transform from being a customer-initiated activity to insurer-initiated reality.

d) IoT can help in reducing the turn-around time for initiation of claims by tracing the exact location and circumstances responsible for the claim.

5. Using Big Data to Improve Claim-Processing Capabilities

- The Big Data analytics enables the insurance companies to identify and report events faster and more effectively. Moreover, claim-assessment activity can now be automatically assigned, based on the performance of the adjuster and complexity of the claim.
- Insurance companies can efficiently execute the subrogation and settlement process, which was a challenge earlier because of the huge data.

Implications

a) Insurance firms will have to improve their capacity for Big Data and processing capabilities.

b) Firms should pick the data from the right sources, as some data may be irrelevant and could be misleading.

c) Firms need to be proactive in trying out new models and tools, as old tools may not be the most efficient in handling new formats of data.

Conclusion

Generally, the insurance companies are fully aware of the existing technologies and have seriously considered the potential advantages and costs while installing such technologies. Moreover, big insurers and high users tend to have greater enthusiasm for adoption of new technologies.

New trends may be spawned by new technologies. While most of the executives of the top insurers are aware of the need to utilize new technologies to compete in future markets, there is a natural resistance to high-tech changes because of their dehumanizing characteristics. The online services can be improved with some more effort by the insurance companies while providing online services as per 'user' expectations.

An attempt has also to be made to project the most attractive benefits and awareness factors in the online-transaction offers. It is observed that most of the respondents only seek suitable products, rate information, pick the most preferred service and calculate the premium payment component from the insurance websites.

Obviously, insurance companies must identify the specific needs of different customer segments so that relevant products and services can be offered as per customers' needs, preferences and expectations to attract business and retain the market share.

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