Utilization of Data Science in Insurance Industry

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ABSTRACT: In today's highly-connected business world, Big Data is big business. Data is used across industries to gauge consumer demands, to improve operational performance, and to drive business growth. The insurance industry is no exception; with careful analysis, data has the potential to unlock new opportunities. This analysis requires a practice known as data science in insurance. In this guide, we will explore data science in insurance and illustrate the way this scientific method is transforming the insurance industry. In its past, the insurance industry was hampered by a lack of actionable data with which to reveal trends. The very nature of the insurance business remains somewhat unpredictable, but over the past 20 years, access to data streams has given insurance agencies a wealth of information. Big Data can come from a wide range of sources, including:

- Mobile computing devices
- Election statistics
- Consumer purchasing habits and preferences
- Satellite and Geographical Information Systems (GIS) platforms
- Credit reports
- Social media activity
- Website traffic analytics
- Government information sources

The introduction of cloud computing systems and powerful analytic tools has made the job of the insurance data scientist even easier, allowing for granular looks at a myriad of factors. With all this information readily available, insurance businesses gain significant competitive advantages.

KEYWORDS: big data, insurance, GIS, cloud computing, business, operational performance

I. INTRODUCTION

Harnessing data and using it to shape decision-making processes is important for any industry and business model. This is especially true in the global insurance sector. Data scientists carefully analyze a wide range of data sets by creating predictive models, which can then be applied to numerous insurance services like:

- Fraud detection
- Customer acquisition and retention processes
- Personalized claims service
- Personalized risk pricing
- Identification of emerging insurance markets
- Development of new insurance products and services

In simple terms, the better the insurance industry understands its own markets and its own consumer demands, the more efficient operations will be. Data makes that efficiency possible.[1]

One of the transformative aspects of data science in insurance has been in the automotive and trucking insurance sector. The combination of telematics sensors (vehicle "black boxes" and GPS transceivers) and mobile computing devices like smartphones have facilitated claims processing. Eyewitness accounts of collisions are rarely reliable; data from telematics can more accurately pinpoint liabilities. These devices can also improve the speed with which claims are

paid by reducing the amount of time needed for investigators to review crash details. Ultimately, the insurance consumer benefits, as telematics can show proof of safe driving practices, often resulting in lower premiums.

Technology in the form of smart home devices and wearables are also having an effect on the industry, particularly in the property and casualty sector. Internet-connected devices (the Internet of Things or IoT) like home security systems, smoke alarms, water sensors, and thermostats work to alert building owners of property-threatening conditions. In many cases, early detection can prevent an adverse event from happening, eliminating expensive insurance claims. As with the automotive insurance consumer, fewer claims often means lower premiums. For wearables, lifestyle data of users can be leveraged to streamline underwriting efforts and life insurance pricing, especially for those individuals in the profitable "healthy" demographic.

II. DISCUSSION

The insurance industry has come to rely on data to make critical business decisions. This data can uncover areas of inefficiency, waste, and fraud. The latter, fraud, costs the insurance sector millions of dollars each year. Prior to the use of data science in insurance, statistical models attempted to detect fraudulent activities. Now, data can more accurately predict and identify fraud, helping to manage the associated overhead losses.[2]

Marketing of insurance is a time-honored practice to gain new customers. In the digital age, insurance marketing has taken on an entirely new set of practices thanks to data science. Digital marketers can target audiences based on specific demographic and geographic factors. With these information sources in hand, insurance marketing campaigns tend to be more cost-efficient while generating improved return on investment.

Finally, development of new insurance products and services is made possible by data science. Based on consumer preferences, demographics, and claims histories, forward-thinking insurance companies can tailor their options to meet specific consumer needs. The end result is a robust insurance market, filled with options for nearly every conceivable risk. Data is the way of the future, and in the coming years, the insurance industry will use data science to identify and capitalize on emerging markets.

III. RESULTS

The behaviors of the customers in the services sector have been changing drastically during the last several years. The reason is all services firms have improved their existing mechanisms and come up with innovative ideas to attract the new clientele and gain the customer loyalty. Therefore, like banking and telecom industry, insurance industry need to study their customers and their changing behaviors. The very nature of the insurance business necessitates knowing health histories, life histories, beneficiary information and more about the demographic profile of the prospective customers. In the post-liberalization of insurance market in India; one factor that contributes to the overall performance of insurance players is Customer Relationship Management (CRM). Due to the increase in number of insurance players and rising awareness among customers about different products, companies in the insurance sector realize the importance of CRM. CRM allows insurance companies to enable the marketing departments to identify and√ target their best customers, manage marketing campaigns with clear goals and objectives, and generate quality leads for the sales team. In this paper, author attempts to analyze the perceptions of customers and employees of insurance companies and their CRM practices.

The insurance industry of India has 57 insurance companies 24 are in the life insurance business, while 34 are non-life insurers. Among the life insurers, Life Insurance Corporation (LIC) is the sole public sector company. There are six public sector insurers in the non-life insurance segment. In addition to these, there is a sole national re-insurer, namely General Insurance Corporation of India (GIC Re). Other stakeholders in the Indian Insurance market include agents (individual and corporate), brokers, surveyors and third-party administrators servicing health insurance claims.[3]

In India, the overall market size of the insurance sector is expected to US$ 280 billion in 2020.

The life insurance industry is expected to increase at a CAGR of 5.3% between 2019 and 2023. India's insurance penetration was pegged at 4.2% in FY21, with life insurance penetration at 3.2% and non-life insurance penetration at 1.0%. In terms of insurance density, India's overall density stood at US$ 78 in FY21.

In the first half of FY22, the life insurance industry recorded growth rate of 5.8% compared with 0.8% in the same period last year.

In September 2021, new premiums of life insurers registered 22.2% growth in September 2021, up from 2.9% in September 2020.
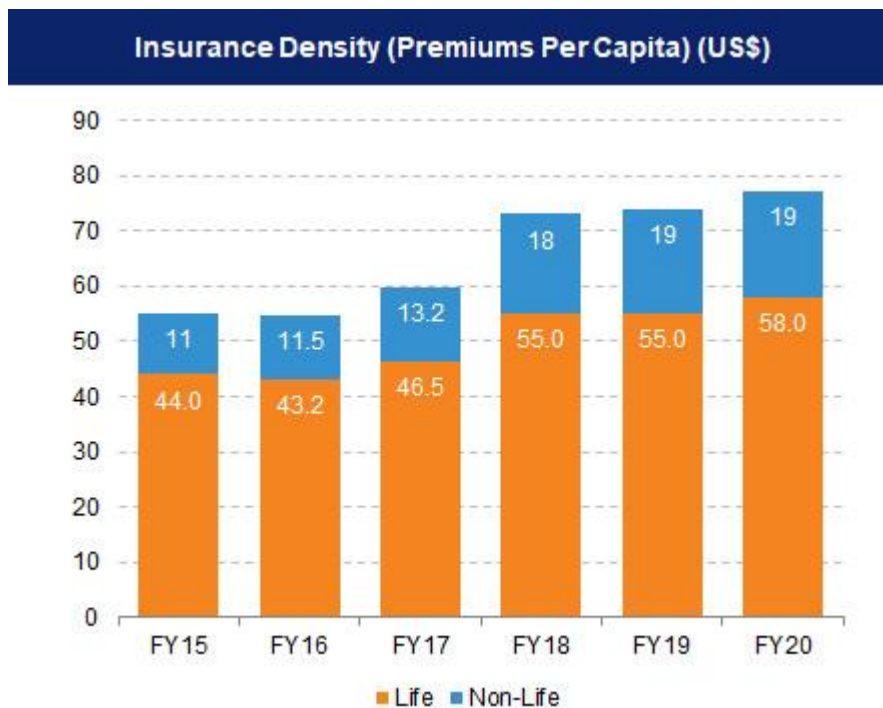
Between April 2021 and September 2021, gross premiums written off by non-life insurers reached Rs. 108,705.3 crore (US$ 14.47 billion), an increase of 12.8% over the same period in FY21. In October 2021, total premium earned by the non-life insurance segment stood at Rs. 17,679.98 crore (US$ 2.38 billion), as compared to the Rs. 15,906.71 crore (US$ 2.14 billion) recorded in October 2020.

The market share of private sector companies in the general and health insurance market increased from 47.97% in FY19 to 48.03% in FY20. In the life insurance segment, private players held a market share of 33.78% in premium underwritten services in FY20.

In FY22*, premiums from new businesses of life insurance companies in India stood at US$ 20.7 billion and renewable premium stood at US$ 53.7 billion.

In July 2021, non-life insurance premium stood at Rs. 20,171 crore (US$ 2.71 billion), an increase of 19.5% YoY, as compared with Rs. 16,885 crore (US$ 2.26 billion) in July 2020. The growth was driven by strong performance from health and motor segments.

In July 2021, standalone private health issuers registered a premium growth of Rs. 1,753 crore (US$ 235.11 million), an increase of 27.5% YoY.[4]

The gross direct premium income for the general insurance industry in India stood at Rs. 1,087 billion (US$ 14.62 billion) in FY22 (until September 2021), an increase of 12.3% YoY, due to 28.8% growth in the health segment and an 84.7% growth in the personal accident segment.

Six standalone private sector health insurance companies registered a jump of 66.6% in their gross premium at Rs 1,406.64 crore (US$ 191.84 million) in May 2021, as against Rs. 844.13 crore (US$ 115.12 million) earlier.

In March 2021, health insurance companies in the non-life insurance sector increased by 41%, driven by rising demand for health insurance products amid COVID-19 surge.

In July 2021, non-life insurers' premium, which include general, standalone and specialised public-sector, recorded 19.46% YoY growth and reached Rs. 20,171.15 crore (US$ 2.71 billion) against Rs. 16,885 crore (US$ 2.27 billion) in the same month last year.

According to S&P Global Market Intelligence data, India is the second-largest insurance technology market in Asia-Pacific, accounting for 35% of the US$ 3.66 billion insurtech-focused venture investments made in the country.

IV. IMPLICATIONS

Over the past decade, digital marketing has revolutionized advertising practices for every industry. The insurance sector is no exception; today, online marketing efforts are critical in driving business growth. Emerging technologies, platforms, and strategies make marketing insurance an ever-changing landscape. Consumer preferences have also evolved, creating new challenges for digital marketing professionals.

In 2021 and beyond, what are the best ways to conduct insurance agency marketing? In this guide, we will explore marketing ideas for insurance agents and agencies, allowing them to improve their online visibility, ensure steady traffic, and create a foundation for organic insurance leads.[5]

Beginning in the late 1990s and expanding rapidly, consumers with internet access began to rely more and more on online search engines to learn about the companies they wished to do business with. Today, the use of search engines exceeds billions of individual searches every day; Google alone processes over 70,000 searches every second, or about 5.8 billion searches on an average day.

Mobile Devices

Search engine use is not the only aspect digital marketers need to take into account for marketing insurance in 2020 and beyond. It is how consumers are accessing information; in the United States, 63% of Google's daily search engine traffic comes from mobile devices. This percentage is only expected to grow in the coming years. Mobile computing has put the consumer in the driver's seat, allowing them to compare multiple insurance companies and their products and pricing with a few swipes of a fingertip.

Local (Geo-Specific) Search

With the rise of mobile devices, the concept of "local search" and its importance for insurance marketers grew. Consumers are increasingly turning to Google to learn more about the businesses in their areas; in fact, about 45% of all Google searches are looking for local information. For insurance firms, mobile devices and local searches represent tremendous potential in connecting with new customers, as 88% of searches for local businesses result in calls or visits within 24 hours. Think about how your insurance agency can be seen locally. One strategy is optimizing your brand's Google My Business page.

Targeting A Younger Generation

Finally, there have been profound generational shifts among consumers seeking insurance information. Today's insurance market is younger and includes so-called Gen Z, millennials, young professionals, first-time homebuyers, and individuals just starting out with their careers or lives away from their parents. These younger consumers are **more comfortable in the online environment**, and smart insurance agencies cater their information to the unique needs and interests of this important group.

Search Engine Optimization

The key to improved online visibility, regardless of business or industry sector, is standing out in online searches. Here, the principles of search engine optimization (SEO) are a valuable tool that is used by digital marketers. SEO is the process of using strategies both on web pages and behind the scenes to allow search engines to better index and categorize web content. SEO should be a part of every digital marketing initiative; after all, if consumers cannot find your site, it makes no difference how functional or informative that site may be. Insurance agencies and brokers should always prioritize SEO in their marketing insurance plans.

Responsive Websites

Because mobile devices are ubiquitous in modern consumer behaviors, mobile-friendly web content is a must. It is important to remember that people aren't just looking for information; they may wish to complete purchases or connect with business representatives. Developing sites that allow for seamless functionality, regardless of the access device, is a critical process. Search engines also favor sites that are mobile-friendly, and this factor alone makes the extra effort to develop such sites worth it. Finally, many insurance firms even use standalone apps to assist their customers in making purchasing decisions or completing transactions, and this aspect should be given serious consideration.

Creating the Right Content

Consumers want information about insurance company products and services. To deliver this information, digital marketers know that text-based web content is crucial, but is no longer the only option. Many marketing initiatives now feature online slideshows, infographics, podcasts, videos, and traditional online advertisements to supplement text-based information. The goal here is to anticipate what consumers need to know, such as how your insurance products and services will be beneficial to their lives. Delivering that information, then, encourages consumers to take the next step.

It is no secret that social media platforms like Twitter, YouTube, Facebook, and Reddit have transformed the digital marketing industry. Companies of every type are enjoying the benefits of social media marketing; in fact, those companies without a social media presence tend to lag behind their competitors who have harnessed the power of these online environments.

Perhaps the most valuable aspect of social media is the ability to make direct and personal connections with consumers. With a few clicks of a mouse, it is easy to post content, respond to comments, or share photos and videos. These acts build engagement and trust, making followers feel as if they are part of something larger. Adding incentives into the social media mix works, too: according to a study conducted by Yahoo, 63% of social media followers would interact with a given business if a coupon or discount were on offer.[6]

Focus on Local Search

As indicated earlier, local search represents a huge opportunity for insurance agencies to grow their businesses. Google has directed much effort into making local search a critical part of the search landscape as well and offers l tools that give business owners the ability to harness this power. Perhaps the best practice for insurance agencies is to claim

listings on Google My Business (GMB). By populating a simple form with business and contact details, the listing will appear in search results and on Google Maps. Best of all, this service is free and can enhance the online visibility of any business operation, from independent agents to MGAs and brokerages.

Once the GMB listing is claimed, it is a good idea to share the same business and contact information on industry and online directories. The goal here is to get contact details in front of as many people as possible. Most of these directories offer free listing services, and may even host online review tools for consumers.

Online Reviews on Third-Party Platforms

Third-party review sites and review features on Google or other search engines have quickly influenced how people respond to businesses. Good reviews help to fuel business growth, while lackluster or poor reviews can have negative consequences for business owners. Repeated studies have shown that as many as 67% of all online users are influenced in some way by reviews posted about businesses they are interested in.

More important than the reviews themselves is how the business responds to reviews. Marketing professionals agree that responding to every review is a smart practice; thanking positive reviewers for their comments and addressing the concerns posed by negative reviewers builds engagement and buying confidence. It also shows the human side of a business – that the business values feedback and uses it as a learning tool for improvement. When responding to critics, it is vital that a professional tone is maintained; too often, businesses get heated in defending their operations, and this can backfire. Instead, thanking the customer for bringing a problem to attention, then inviting them back to the business can defuse an angry customer.

Insurance marketing is a complex process comprised of many parts. By building a robust website, then supplementing it with social media, business profiles, and reviews, insurance agencies can get the most out of the digital marketing experience. Together, these tactics build engagement and position the firm ahead of its competitors in online visibility both now and for years to come.

V. CONCLUSIONS

Insurance companies are in a unique position when it comes to marketing. They have no tangible products to sell, but must instead rely on strong relationships with loyal customers and word of mouth to help them compete. Still, despite the challenges, the marketing strategies for insurance companies are really no different than for any other company and require a strong focus on the basics of effective marketing.

Identify the market:

First and foremost insurance companies must know their market. This means having a strong understanding of their target audience, their competition and the most effective ways to connect with that audience. Service organizations like insurance agencies that thoroughly understand the needs and concerns of their target audience can effectively motivate that audience to connect with them.

Establish a plan:

Successful marketers based on their knowledge of the market and their overall goals and objectives, Successful marketers identify and prioritize the communication strategies most likely to generate the results they need. This generally involves a combination of activities that include both traditional and new media, direct and direct sales.

Measure effectiveness:

It is important for insurance companies to measure the effectiveness of their marketing efforts based on the goals they have established. This may be as simple as comparing the number of clients before and after a campaign. It may also involve using online analytics to monitor website visits after launch a promotion.[7]

Gather feedback:

For insurance marketers, word of mouth is the key. In addition to measuring the effectiveness of marketing efforts based on quantities data, insurance marketers can seek input from their existing, and .new clients about their communication efforts what worked well? What was unclear? How might they communicate more clearly in the future? In addition, clients can be excellent advocates and part of the marketing process. Successful insurance marketers will take advantage of the opportunity to leverage their clients as word of mouth marketing advocates.[7]

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