Maximizing Customer Satisfaction in Insurance Claims with RPA and Chatbot Solutions:

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Abstract:

In the insurance sector as a whole, firms have made some big and significant adjustments to modernize their entire core process to make things simpler and more effective for both the organization and the clients. Enterprises are working to transition from isolated transactional systems to contextual engagement systems to better serve their expanding customer base and enhance the overall customer experience across all touch points. The scanning of papers, uploading them for processing, automating bank transfer operations, and other forms of automation are already commonplace among insurers.
Yet, it can occasionally result in subpar performance or sluggish procedures. Robotic process automation (RPA) uses software robots to carry out administrative duties that would often be handled by humans. Organizations in the insurance sector have made some significant investments in RPA, which can assist them in achieving their business goals while utilizing current technology and increasing the returns on their prior and ongoing transformational investments. For processing this request, insurers can utilize RPA to handle the large amount and complicated data at faster rates and in less time. Through increased automation, increased productivity, and increased focus for claims specialists, RPA is prepared to assist claims businesses in moving forward and improving their outcomes in the digital era.

Keywords: Robotic Process Automation, RPA Chatbot, Insurance Claims RPA.

I. INTRODUCTION:

Robotic Process Automation (RPA) is making it easier and more efficient to perform tedious, repetitive tasks without human hands. Nowadays we have 'bots' or software applications that can carry out predetermined processes independently - this process of automation allows technology to take the lead on data extraction, manipulation, calculations, and form filling in a matter of moments! RPA ensures that businesses stay up-to-date with their day-to-day operations while saving time and money; all by providing an automated workflow solution for handling vast amounts of info quickly.

RPA is a revolutionary technology that helps businesses not only increase efficiency but also maintain IT-friendliness. It offers extraordinary flexibility and can be used with other

technologies for maximum potential. To create an RPA system, users' actions are recorded while they carry out tasks on their applications' GUI; then the same task automation process takes place in the target systems. What makes it even more efficient is its dependability when dealing with both structured and semi-structured data along with remote deployment capability plus analysis of results afterward - making sure every job runs smoothly.

Harnessing the power of Robotics Process Automation and chatbot technology can grant organizations unprecedented access to intelligent conversations with their customers. Through natural language processing, artificial intelligence, and RPA-enabled data mining on web sources, businesses have a cutting-edge toolset at their disposal that simplifies human/computer interactions while providing rapid analysis capabilities.

II. LITERATURE REVIEW:

The adoption of fully autonomous solutions is on the rise, and it is forecasted that the 4th industrial revolution will liberate humans from tedious and routine work by automating many typical tasks [1]. Robotic Process Automation (RPA) is a smart software application that can be used to perform a series of tasks without human intervention, which can eliminate the need for the workforce for various services and execute a huge number of duties in the IT sector. RPA allows the creation of workflows through which it can process data by itself and take actions accordingly, including data extraction, manipulation, calculations, maintenance of records, filling forms, and browser automation activities. RPA is notably flexible, making it both business-enabling and IT-friendly, and it can be deployed alone or in conjunction with other technologies. RPA systems are developed by watching users perform tasks in the application's GUI and then automating those same tasks by repeating them directly in the target system [1].

RPA has several benefits, including eliminating the requirement for the workforce for various services and performing repeated, logarithmized, and labor-intensive work with ease. RPAs can be used in the public sector, such as constructing answers or replies to government organizations on standard requests, tracking shipments and cargo, customer service, accounting and finance, and information technology, improving customer satisfaction and lowering costs by automating tasks for organizations or governments [1].

In the banking industry, Business Process Management has become crucial in IT development, and the researchers have emphasized the significance of growing priority on operation administration and management involving a mixture of planning, designing, modeling, automation, and implementation to improve the overall efficiency and optimize business activity flows to support enterprise goals. RPA with AI and ML has the ability to hold excessive-volume, repeatable operations/procedures that previously involved humans to carry out, and it can completely or partially automate physical, rule-based, and monotonous human activities [2].

In factories, a lot of work needs to be done manually, and some of its tasks are repetitive and long-lasting. Control equipment can be used with three parts, simulated mouse signal, keyboard

signal, and computer screen image, through which controlling can be done. Image recognition can be used for the computerized transformation of images of printed, handwritten notes or any text into device conceal text, which can be later used to feed the input in the machine, using the statistical index of pixel info or ANN (Artificial Neural Network) [3].

The usage of Chatbots with RPA, AI, and ERP is discussed in a blog from Capgemini, which highlights the boom of AI that is enabling smarter chatbots to understand unstructured human input by applying NLP. A simple chatbot would offer a natural way for the customer to interact and change its master data without the need to find the right account and then do settings and change the data. This also saves time for back-office employees who can focus on exception handling or more value-adding tasks [4].

A white paper from EY discusses the disruptive nature of RPA, which imitates a "virtual human" and pulls artificial intelligence and expert systems to a higher level. RPA has the capability to modify and alter to different situations compared to old automation. The paper discusses three classes of Automation, which are Intelligent Class 1: Basic Process Automation (spreadsheets), Class 2: or Enhanced and Intelligent process automation (NLP), and Class 3: Cognitive Platform (customer queries). It also discusses its scalability and reduced cost of labor, which can help an organization in future growth [5].

III. TERMINOLOGY:

RPA is revolutionizing the way tasks are completed. Automating mundane jobs saves time, money and countless hours of manual labor - all while providing accurate results in a fraction of the time. This technology has become increasingly popular as it offers a wide range of advantages for businesses across sectors.

Need:

One of the primary needs for RPA is to save time and reduce costs. With RPA, work can be automated with more precision and accuracy of data, while also reducing human efforts. RPA provides greater quality of services and helps in the rapid growth and scalability of the project. The number of workers required to complete tasks is also reduced, and different work can be allocated to employees/workers. Additionally, RPA can work 24*7 and can be remotely deployed and managed.

Benefits:

There are several advantages to utilizing RPA. Workflows can be easily configured and are often code-free. They are simple to deploy and manage remotely. Implementing RPA can result in significant cost savings for organizations by automating tasks. RPA applications can operate 24/7 without any downtime, with reduced operational costs and risks, and lower error rates, which decreases operational risk. Employees can be assigned to more productive tasks, increasing their efficiency. The technology is user-friendly and can be learned quickly, and robot capacity can be expanded as required. RPA is suitable for most computer-assisted

operations governed by protocols and rules, and it improves data accuracy and analytics in these fields.

Drawbacks:

One of the biggest concerns with RPA is the fear that robots may replace humans in their jobs, as they can perform tasks at a much faster pace and with consistency. This leads to job losses in various industries. Additionally, the initial investment costs for implementing RPA can be high, and a comprehensive business case must be built before considering the implementation of this technology.

IV. RPA IN INSURANCE BUSINESS ENTERPRISES:

The process of implementing RPA in insurance business enterprises involves identifying various business process automation opportunities, such as insurance claim processing, policy inquiry, premium payment, auditing and invoice processing, payroll processing, and travel and logistics management. RPA uses computer vision technologies like OCR to extract text from documents and pictures uploaded by insurers, which enables them to settle insurance claims quickly. RPA is also used to analyze the market and determine the needs of future customers, and it helps to future-proof the insurance business by blending new technologies.
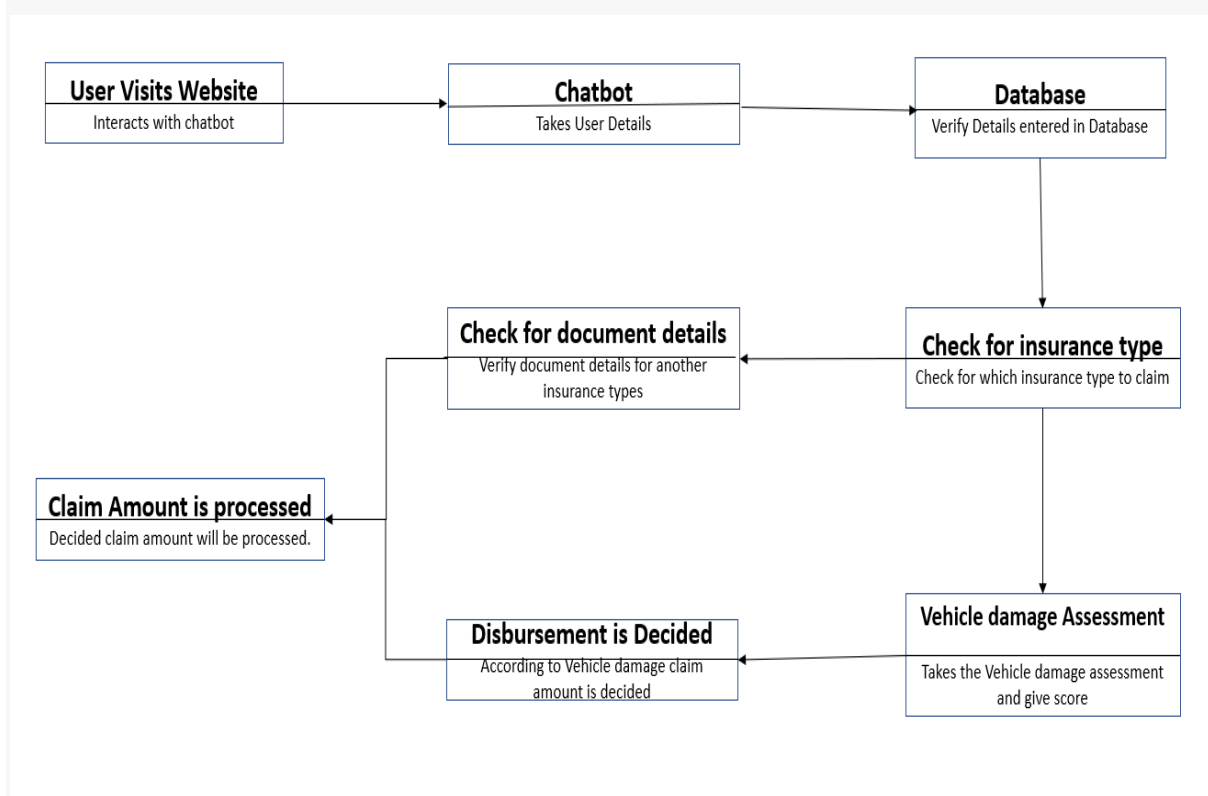

Figure 1: Architecture of Insurance Claim Processing using RPA with chatbot

The architecture of RPA in insurance claims involves a hosted website, chatbot, car damage detection module, and non-SQL cloud database server, as shown in Figure 1. The chatbot,

which is deployed on the website, is integrated with Google's Dialogflow and connected to Google Sheets for keeping a history of all chats with customers and the location of all uploaded documents on the cloud. The non-SQL cloud database server verifies the customer's policy and other personal details, and the car damage detection module predicts the damage and generates a score.
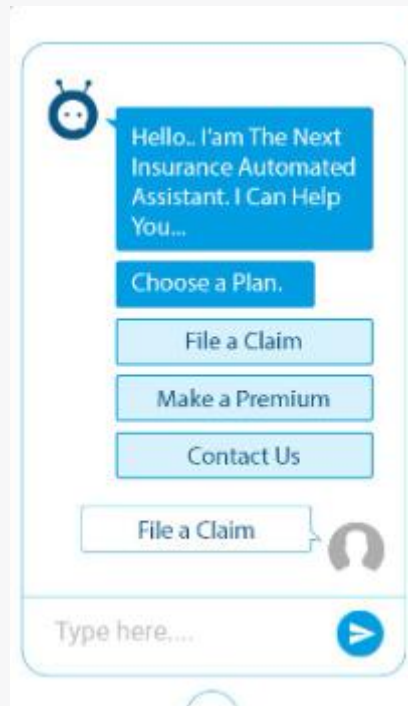

Figure 2. Chatbot implemented on the Website.

Figure 3. Deep Learning Module on Car Damage Detection.

For security reasons, all chat logs are mailed to the customer to ensure legitimate claims, and the customer can reject false claims from the email. The second email will contain the claim

amount. Figure 2 shows the implementation of the chatbot on the website, and Figure 3 depicts the deep learning module for car damage detection.

V. RESULT:

The utilization of RPA in insurance claims will not only result in time and cost savings from manual processing, but it can also improve customer service quality by reducing the likelihood of customer dropout and enhancing their convenience [10]. RPA can boost overall functionality and user experience when utilize alongside other tools and technologies. Many businesses have realized that RPA cannot operate optimally on its own and requires integration with distinct tools and software to become a flexible and powerful tool with the capability to automate processes. When combined with other tools, applications, and human workforce, RPA can become an advanced and comprehensive system in an enterprise.

VI. CONCLUSION:

The numerous advantages that RPA offers have positioned it as a leading technology in the current market, attracting the interest of organizations worldwide. By automating manual tasks with RPA bots, insurers can interact with customers more efficiently using chatbots. With RPA, insurers can easily upload the necessary documents and images to the online database, which can verify policy details instantly. RPA's car damage detection can quickly analyze the damage and predict the claim amount, streamlining the entire process and improving the overall experience for insurers. All these benefits make RPA an attractive solution for insurance companies looking to enhance their services and reduce costs.

VII. FUTURE SCOPE:

The growing trend of automation in enterprises to reduce costs and simplify tasks is creating a promising future for RPA. This is resulting in a new market for RPA, which is expected to experience significant growth. The main driving factors behind this growth are efficiency, performance, and cost benefits. With RPA's ability to interact with various apps and software, it can serve as an alternative solution to offshore outsourcing and may see increased adoption in critical sectors such as logistics, retail, supply chain industries, management, analytics, insurance, banking, financial sector, legal, oil & gas, etc. Going forward, RPA is poised to play a pivotal role in managing data scraping and data entry operations, thus improving efficiency and throughput across various industries. There is a vast scope for further development in this field, and research must be initiated to fully unleash RPA's potential.

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