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Centralized End User Support System using Rapid API and Firebase with BOT Framework

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Abstract: *A Centralized customer support system is a software platform designed to manage and streamline customer interactions with a company. This system is typically used by customer service teams to provide support, handle inquiries, and resolve issues. The main objective of a centralized customer support system is to improve the overall customer experience and satisfaction by enabling prompt and effective communication between customers and the company. The system can include various features, such as a knowledge base, automated responses, live chat, and ticket management, all aimed at ensuring that customers receive the best possible service. A centralized customer support system is an essential tool for any business looking to enhance their customer service capabilities and build long-term relationships with their clients.*

Keywords: Customer Support; Framework; API; Centralized; Centralized Cloud; Support System

I. INTRODUCTION

A centralized customer support system is a software application designed to provide customer service and support to customers from a central location. The system allows businesses to manage customer inquiries, complaints, and requests in a single place, streamlining the support process and improving customer satisfaction. Centralized customer support systems are often used by businesses that have multiple channels of customer communication, such as email, phone, chat, and social media. These systems enable businesses to manage all customer interactions from one central platform, making it easier for support agents to respond to inquiries quickly and efficiently. One of the main benefits of a centralized customer support system is that it provides a single point of contact for customers, reducing the likelihood of customers having to repeat themselves or having their inquiries go unanswered. Additionally, these systems often include features such as ticket tracking, automated responses, and customer data management, all of which contribute to a more efficient and effective support process. Another advantage of a centralized customer support system is that it allows businesses to track customer interactions across different channels, providing valuable insights into customer behavior and preferences. This information can be used to improve products and services, develop targeted marketing campaigns, and enhance overall customer experience. Overall, a centralized customer support system is a valuable tool for businesses looking to improve their customer service and support capabilities. By consolidating customer interactions into a single platform, businesses can streamline their support process, reduce response times, and enhance customer satisfaction.

II. TECHNOLOGICAL INNOVATION THEORY

A unified client care framework alludes to a framework where all client care capabilities, like requests, grumblings, and backing demands, are overseen and handled in a solitary area or framework. Instead of having to get in touch with a number of different departments or teams within an organization, customers instead interact with a single point of contact for support issues. Businesses and customers alike can benefit from centralized customer support systems. A centralized system allows businesses to better organize, track, and manage customer support interactions, resulting in more effective and efficient support delivery. Additionally, it helps guarantee high-quality support and consistent communication across all channels and touchpoints. A centralized system provides customers with a support experience

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that is more seamless and streamlined, with quicker resolution times and a clearer understanding of the support procedure. In addition, customers do not have to worry about interacting with multiple support teams or navigating various support channels, both of which can be confusing and frustrating.Overall, a centralized customer support system can assist businesses in enhancing their customer support operations and providing a superior customer experience, which in turn can result in increased customer satisfaction and loyalty.

2.1 Limitations

A centralized customer support system has limitations like any other system. Here are a few normal restrictions that organizations might experience:

- System Outages: Customers may not be able to receive the assistance they require if the central customer support system experiences any technical difficulties or outages, resulting in frustration and dissatisfaction.
- Expensive for Implementation: For small businesses with limited resources, setting up and implementing a centralized customer support system can be expensive.
- Compatibility with Preexisting Systems: To ensure a smooth transition, integrating a new system with software and business processes that are already in place can be difficult and may necessitate additional time and resources.
- Uncapability to Deal with Complex Problems: Automated or pre-programmed responses may not be able to adequately address some customer issues because they may be too complicated or necessitate a more individualized approach.
- The System Dependence of Customers: Customers may be less likely to seek alternative means of communication or resolution if they become overly dependent on the centralized customer support system.

2.2 Centralization and Decentralization

"Intimately coupled with large, corporate, or state organizations" has always been the norm in the IT industry. In contrast to the loosely defined tasks and outcomes of earlier IT work, IT work has become increasingly restricted and focused on organizational objectives. The focus here is on centralization within this context of increasing control. Centralization concerns who will settle on conclusions about client supportat the time that help is being conveyed. Because it moves the development of the corporate knowledge base from typically multiple locations within the organization to a single location within the organization, a call center is particularly concerned with authority distribution. Centralization would be expected to be associated with the automation of communications between agents and customers, which is the primary goal of call centers. However, because it relies on workers' ability to exercise some discretion and autonomy, customer service and support are frequently geared toward some kind of decentralization.

Investigations of how much the executionof IT in associations has been related with centralization have differed in their decisions. In the 1960s and 1970s, researchers investigated the question of whether communicators "caused" decentralization or centralization. An early review, for instance, anticipated adecrease in the quantity of center administrators in organizations that mechanized and, subsequently, anexpansion in centralization. This finding was contradicted not long a while later. According to another researcher, computers do not actually alter organizational structure. Instead, they may facilitate either centralization or decentralization due to their adaptability. Two researchers have recently come to the conclusion that where the technology was located, who controlled it, the degree of centralization or decentralization that was currently in place, as well as the roles of middle managers themselves, all had an impact on how IT affected middle management ranks. "Top managers become clear about the values they seek, that they convey these values when making major computing investments, and that they look to see whether these values are achieved," they emphasized. They argued that organizations adopting IT have strategic options, such as centralization, that are unavailable to other organizations.

The project uses bright data for data scraping and a proxy network to remove restrictions in order to create the necessary dashboards. Microsoft Power Inquiry and python modules like pandas, operating system for information cleaning and information change from the rejected informational indexes. Together with Business Intelligence, Data Analysis Expressions are used to gain a deeper understanding of the players' statistical data. To create dashboard visuals and entity relationships between the data sets, the Microsoft Power BI platform offers all the necessary tools. In

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order to provide a better understanding of player statistics, the developed visuals hold their relationships and consequently alter other visuals. The dashboards are dependable and concurrent thanks to the Microsoft Power BI platform's management of data sets. For the best user experience, front-end web technologies like Html, CSS, and JavaScript dependencies are used to build a web application that combines all of the visuals on a single page.

The Technological Innovation Theory suggests that the adoption of new technologies, such as centralized customer support systems, is driven by the perceived benefits and relative advantages of the technology compared to existing systems. In the case of centralized customer support systems, the perceived benefits may include improved customer satisfaction, more efficient handling of customer inquiries, and better data management.Furthermore, the theory suggests that the adoption of a new technology is influenced by factors such as the compatibility of the technology with existing systems and processes, the complexity of the technology, and the level of trialability and observability of the technology.Centralized customer support systems are generally compatible with existing customer support systems, as they are designed to integrate with multiple communication channels, such as email, phone, and chat. Additionally, many of these systems are designed to be user-friendly, with intuitive interfaces and automated features that simplify the support process. The complexity of centralized customer support systems can vary depending on the specific system and the level of customization required, but many of these systems are designed to be easily configurable and require little technical expertise to implement. Finally, the trialability and observability of centralized customer support systems may be influenced by the availability of demos or free trials, as well as the ease with which businesses can track and measure the impact of the system on their support operations. Technological Innovation Theory suggests that centralized customer support systems are adopted due to their perceived benefits and relative advantages over existing systems, and that factors such as compatibility, complexity, trialability, and observability may influence the adoption process.

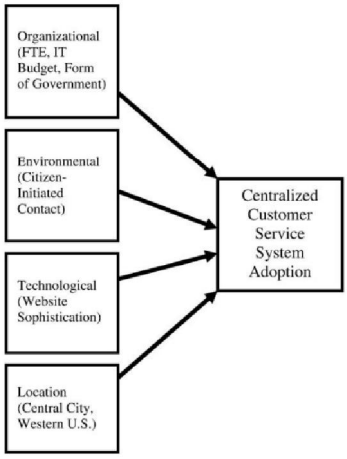
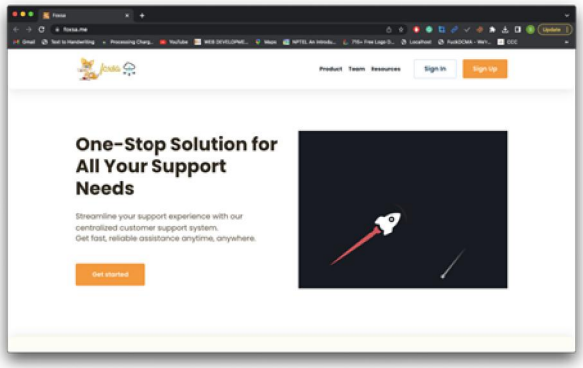
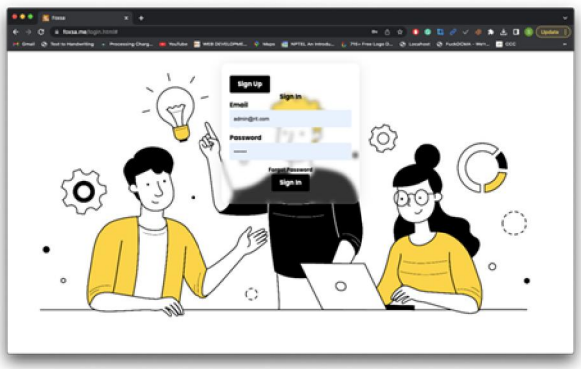


Fig 1: Conceptual framework of technological innovation adoption of centralized customer service systems.

3.1 Application Analysis (www.foxsa.me)



Home Page



Login Page

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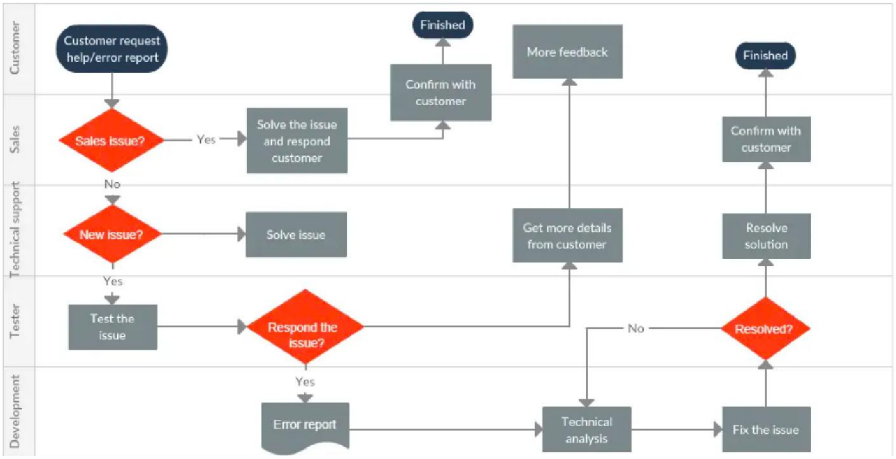
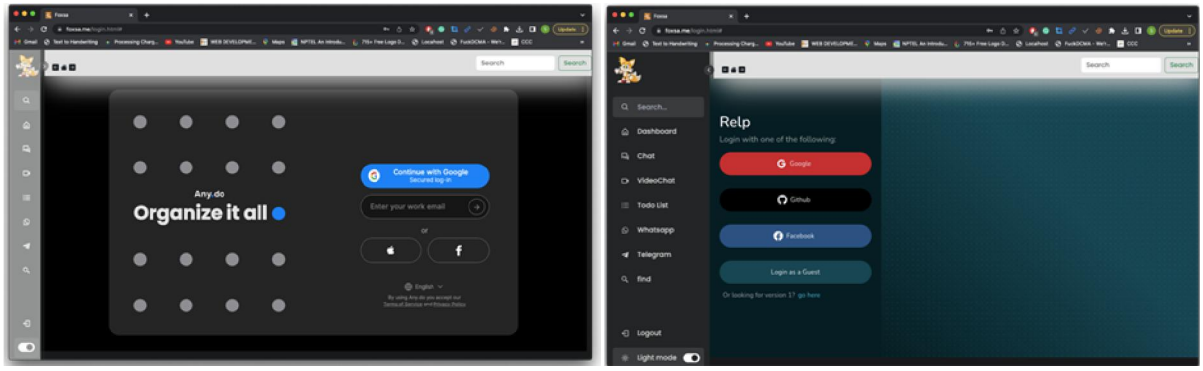
Customer experience analytics can be harnessed to drive revenue. CX analytics are a form of descriptive analytics, asking "what happened" during the customer journey. These can be seen as the "standard" type of customer analytics: they summarize raw data into something easily understandable and explainable.From support data, key performance indicators like Customer Satisfaction (CSAT), First Response Time (FRT), and Total Time to Resolution (TTR), can be pulled and viewed to improve existing workflows. For support agents, CSAT can help with measuring performance while helping staff across the organization, from product and marketing to sales, see where to work towards improvements. Support leaders managing data should differentiate when to use real-time and historical analytics, and the use of prescriptive dashboards shared across the organization can aid in the visibility of data. Customer service managers get the most out of descriptive customer experience analytics by recognizing trends, such as an uptick in tickets near product launches or during the holiday retail season. Those insights can fuel strategies for the next time the events occur. The data can also tell a story of how a support organization is functioning, leading to optimization for ideal customer support or departmental budgeting.



Customer Support Process Flowchart



3.2 Improve Communication with Customers

At times it helps to have a script to direct a conversation between a customer service agent and a customer. A flowchart can prove handy in this case as it helps to visualize the flow of the conversation you might have with a customer.You can change the content in the flowchart to adjust it to any scenario. It can be used to train new customer support agents as well.

3.3 Understand the Customer Journey

As a customer support agent, it is essential to know the experiences the customers go through as they interact with your company. Knowing how they interact with your product will help you understand their behavior and context. In turn, it will allow you to communicate with them easily.

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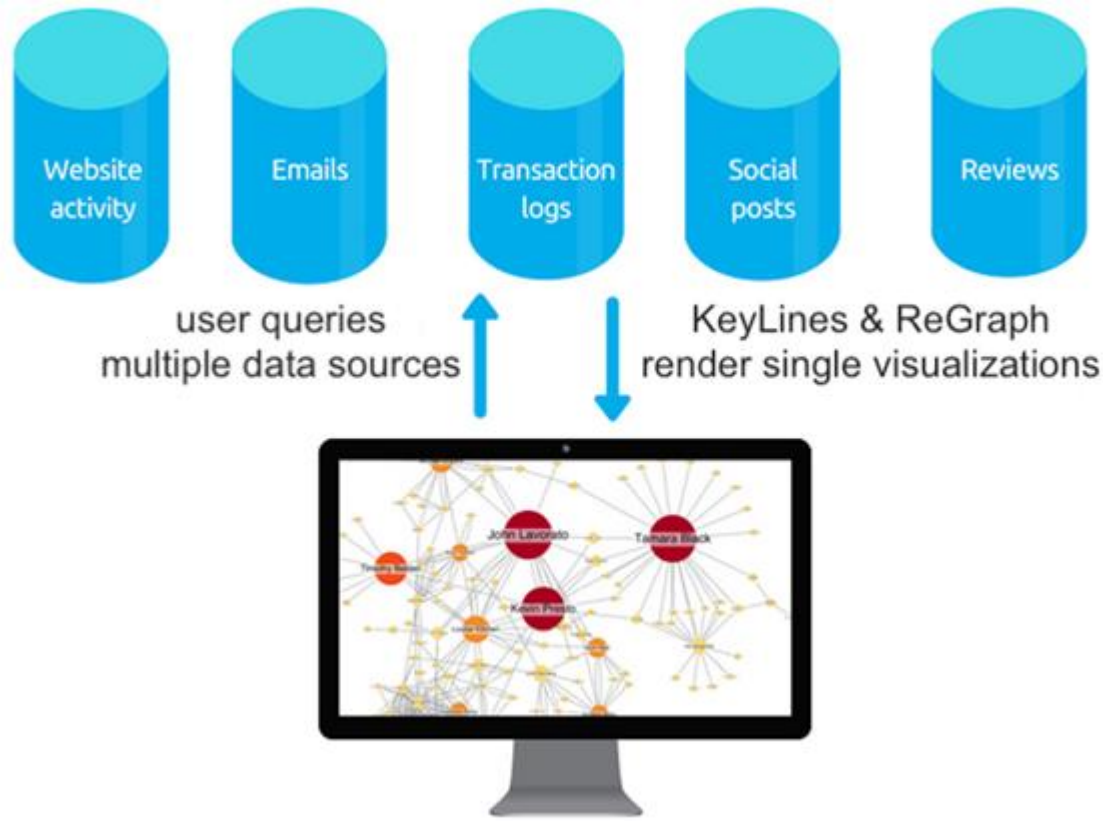

IV. CONCLUSION

In conclusion, a web application that enables the centralization of a support system for customer service can offer numerous advantages to both businesses and their clients. The application has the potential to enhance the overall customer support experience, reduce response times, and increase efficiency by combining ticket management and support resources into a single platform. Utilizing cutting-edge technologies like artificial intelligence (AI), machine learning, and automation can also present additional opportunities for growth and advancement. A dashboard and search option are typically included on the application's home page, allowing users to quickly access account information, support tickets, and support resources. In addition to performance metrics and reports, the dashboard can provide users with an overview of their account activity and support tickets. Users may be able to customize their view to meet their specific requirements and preferences using customization options. The web application still has a lot of room for growth and improvement in the foreseeable future. A few potential areas for improvement include gamification, personalization, automation, AI and machine learning, mobile app development, multilingual support, and integration with other systems. In general, a web application for the centralization of a client administrations emotionally supportive network can assist associations with giving a consistent, productive, and successful help insight, prompting further developed consumer loyalty, dependability, and maintenance.

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