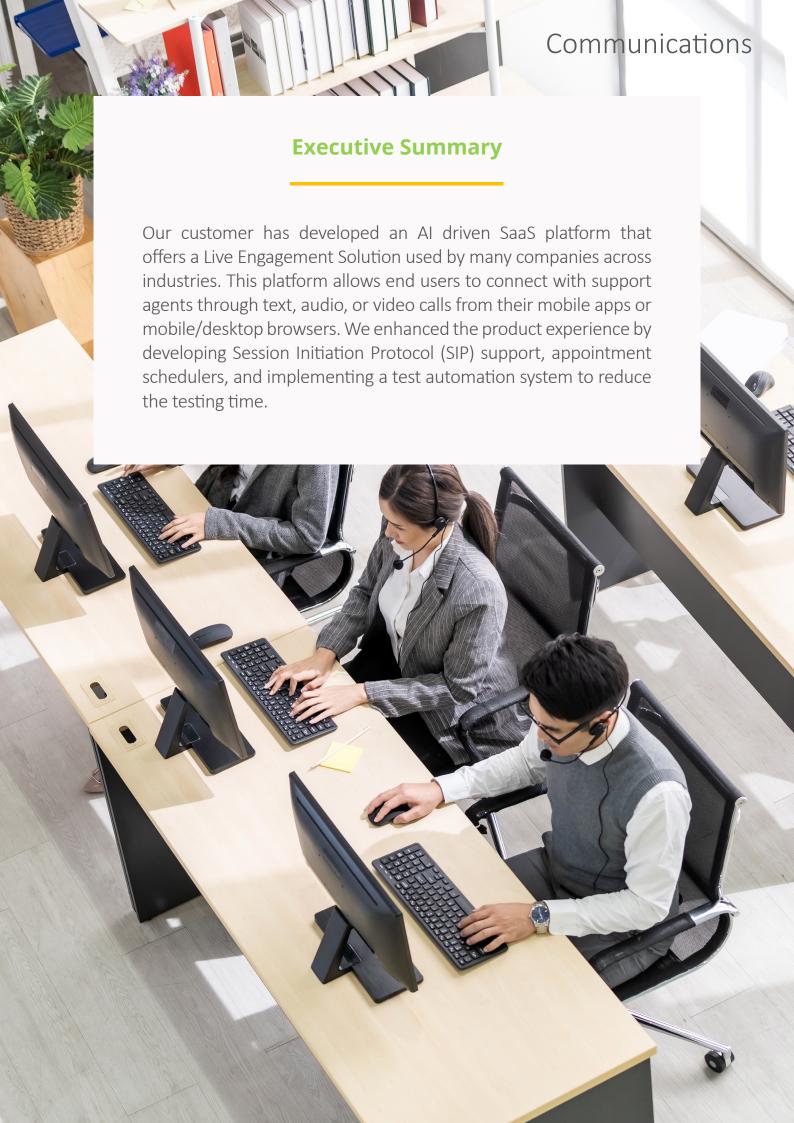Case Study

Improving user experience through new feature development and capability expansion

A SaaS platform expands capabilities and reduces product implementation time by building a test automation solution

Executive Summary

Our customer has developed an AI driven SaaS platform that offers a Live Engagement Solution used by many companies across industries. This platform allows end users to connect with support agents through text, audio, or video calls from their mobile apps or mobile/desktop browsers. We enhanced the product experience by developing Session Initiation Protocol (SIP) support, appointment schedulers, and implementing a test automation system to reduce the testing time.

Overview

Our customer had developed an intelligent, multi-experience customer engagement platform which allowed multiple business functions such as marketing, sales and support services to collaborate with their customers. Our customer wanted to provide a unified communications experience through this platform, and to achieve this goal, they wanted to enhance the existing product by adding new features like SIP support and an appointment scheduler. They also wanted to reduce the testing time of the application for each use case.

Challenge

Our customer's existing platform is an advanced & highly customizable solution. They wanted to ensure that none of the existing functionality of their platform broke down while creating new features. Our customer wanted to add the following features:

- SIP support for the platform, which would connect calls to agents across all channels like telephones, VoIP applications, messaging applications and route the calls to existing agent software.

- Agent routing and validation were needed to ensure that each appointment is routed to the agent with right expertise and that the same agent is not assigned to multiple clients.

- An appointment scheduler had to be embedded into their current site without affecting existing functionality.

- A UI was needed for the scheduler to stand alone and embed in other sites without affecting the site's styling and scripts.

- The customer also wanted to create a test automation framework, which would be compatible with different devices & operating systems. This framework also had to support automation of chat bot test cases.

Solution

GS Lab's expertise in unified communications and protocols like SIP, RTP and BFCP allowed our customer to quickly achieve their goal. We took complete responsibility of new features and designed an end-to-end solution right from development to testing. We also recommended and implemented third-party platforms and frameworks like Twilio and Bootstrap. We developed a test automation framework using Python, Robot and Selenium which automated & integrated the entire sanity suite for end-to-end text chat between the customer and the agent.

SIP Support

We implemented the Twilio platform to:

- Connect incoming and outgoing calls with a number.

- Validate the calls and parameters before forwarding them to the respective agents.

- Establish parallel calls using multiple bridges along with customized busy and waiting tone features.

- Create agent routing algorithms which could connect the callers to the right agents.

Appointment Scheduler

For the appointment scheduler, we implemented a customized and namespaced bootstrap & JSON to:

- Provide styling consistency for the end point user.

- Add events and time slot options using Calendar UI.

- Allow customization and styling of resources, input forms, and appointment parameters with responsive administrative UI.

- Provide appointment reminders feature for both customer and agents.

- Enable 'appointment only' mode for agents to receive only appointment-related calls.

- Attach an ICS file to add the event directly in Google or Outlook calendar.

- Support styling and globalization and load scripts on any page or site.

- Customize forms and validation options.

Testing Automation Framework

For test automation, we implemented Python, Selenium and Robot frameworks to automate the testing of the following use-cases:

- Sanity suite for end-to-end text chat feature between the customer and the agent

- Co-browsing, chat, file transfer and byte-by-byte file validation

- Google's dialog flow intent verification based chat bot

- AFK validation, agent escalations and report verification

- Compatibility checks with multiple systems on different operating systems covering exhaustive customer-agent communication

The framework can now notify users with detailed test execution reports and easily scale-up for upcoming features like mobile browser automation.

Impact

**Reduced
testing
time**

**Enhanced
customer
experience**

**Improved
capabilities for
expansion**

GS Lab's technical excellence and in-depth understanding of the communication technologies empowered us to address the customer's challenges and advanced their product to the next level.

- **Improved customer experience:** The end users can now connect with their agents across various channels like phones, VOIP applications, and messaging applications. Users can now schedule appointments.

- **Product expansion:** New features opened the product to implement new uses cases.

- **Reduced regression testing time:** The Test Automation Framework substantially reduced the QA cycles and minimized testing-errors.

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