Harnessing the Power of Google Cloud and Conversational AI: A Global Media's IT Support Evolution

Heavily reliant on freelance and contract journalists, the company needed to liberate its IT support staff from daily low-level requests so staff could focus on more impactful projects.

The Client

The customer is a digital media and broadcasting company that produces a range of content, from music to news to film and documentary production. But although the company continues churning out award-winning journalism, their reliance on an ever-changing roster of freelance journalists meant IT staff were constantly bombarded by high-volume, low-level request tickets that didn't require human interaction.

Data was also siloed across several repositories, including a Freshservice knowledge base, Google Drive, and other external knowledge bases—making a self-service option without intelligent automation and conversational AI a non-starter.

Because Pythian is a trusted Google partner and was already the customer's Google Workspace consultant, the Google Cloud team asked Pythian to leverage our Google Cloud and conversational AI expertise to automate the navigation of internal users to the correct answers. Google also recommended our team because Dialogflow expertise on an enterprise scale is still relatively rare, and large language models (LLMs) such as ChatGPT weren't yet available.

The company's reliance on an ever-changing roster of freelance journalists meant IT staff were constantly bombarded by high-volume, low-level request tickets that didn't require human interaction.

Industry

Internet / Media

Location(s)

Canada / USA

Technologies

- Google Cloud Functions
- Dialogflow
- Google Drive (Workspace)

Overview

Our customer, a digital media and broadcasting company, produces a range of content, including music, news, films, and documentaries. Although the company continues churning out award-winning journalism, their reliance on an ever-changing roster of freelance journalists meant IT staff were constantly bombarded by high-volume, non-technical request tickets that didn't necessarily require human interaction.

Data was also siloed across several different repositories, including a Freshservice IT service management (ITSM) knowledge base, Google Drive, and other external knowledge bases—making a self-serve option without intelligent automation and conversational AI a non-starter.

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The Challenge:

Heavily reliant on freelance and contract journalists working in the field—often in remote locations—the company needed to liberate their IT support staff from daily, non-technical requests from contractors so staff could focus on more impactful projects. These support tickets included the lowest level of IT requests, including routine password resets, Wi-Fi credentials for a particular office, and other IT support for journalists in the field.

While this information was freely available within internal documents before Pythian's engagement, it was next to impossible for contractors or employees to locate the correct information independently.

The customer needed to automate their internal IT ticket process for these low-level requests via an intelligent chatbot powered by conversational AI, thus reducing the need for an in-house resource to answer non-technical questions.

The customer also needed the chatbot to draw on a single source of truth from various internal and external data repositories, including a Freshservice IT service management (ITSM) knowledge base, Google Drive, and other external knowledge bases.

The Solution:

Working with the IT director overseeing the help desk team, Pythian first conducted a discovery phase to select the most appropriate use case for the proof-of-concept (PoC) and determine data parameters, such as the number and types of target documents to be used.

These discovery sessions validated the document search use case. We held additional sessions to gauge data quality and completeness and to define and create the chatbot's initial features. Our team next developed a single-channel output PoC using Google Dialogflow in conjunction with Google Cloud Functions and a custom document vectorizer to facilitate nuanced vector search capabilities.

- **Google Dialogflow:** Facilitated the conversational AI virtual agent to support rich and intuitive contractor and employee interactions when answering IT support tickets. A Dialogflow virtual agent was iteratively architected and trained to improve conversational outcomes.

- **Google Cloud:** The backbone of the customer's technology stack, all IT support requests and internal onboarding occur on Google Cloud. Pythian integrated the conversational AI model within Google Cloud via the Dialogflow API. Cloud Functions help developers write and operationalize code at higher velocities, and was used in this case to run serverless and containerless code in the cloud.

- **Custom document vectorizer:** Developed to turn text into vector embeddings, which allows the conversational AI agent to match documents to queries in a much more efficient and nuanced way.

Business need:

The media company needed to optimize its internal IT ticket processes through the automation of routine employee and contractor requests for support to improve efficiency and amplify existing skill sets within the IT team.

Because the company relies on contractors and freelance journalists often deployed in the field with few in-person resources at hand, these requests were extremely common. Answering each of these queries through a human IT staffer was relatively slow, inefficient, and costly.

Solution/What Pythian did:

Pythian worked with the customer's IT director to develop a proof-of-concept (PoC) that demonstrated the effectiveness of intelligent virtual agents (a.k.a chatbots and voicebots) to automate various requests for IT support in Google Chat or via email.

The virtual agents utilize a custom document vectorizer, which encodes unstructured data such as text and images, in Google Cloud Functions acting as a single source of truth from a series of internal and external data repositories. Cloud Functions allow users to run serverless and containerless code in the cloud.

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Several tests were then conducted with the customer to validate and performance-tune the conversational AI model.

Results:

Pythian's deep familiarity with the Google Cloud ecosystem and expertise in conversational AI—from model development and training to integration with the correct data sources to testing—provided the customer with a highly functional PoC within just two months.

Along with developing and implementing a conversational AI tool that can scale the media company's IT team (and make other staff more effective through faster answers), we acted as a concierge for the customer. Our trusted Google Cloud Premier partner status allowed us to pitch the technical and logistical details to Google, develop the project, and conduct inclusive knowledge transfer to the customer's IT staff.

The customer now has a high-performing PoC they can implement across the entire company within the Google Cloud environment.

- The customer's IT team can now provide instant answers to employees or contractors in the field on a range of important topics instead of making them wait for IT staff to receive the ticket and provide an answer

- The customer's IT staff now has the bandwidth to focus on more value-added tasks that provide more business value

- The customer can scale their IT team in terms of efficiency and effectiveness by leveraging conversational AI technology

- The customer can easily scale the conversational AI model to meet additional use cases, such as employee onboarding or software/application approvals

Want to see similar results for your company?

Get in touch with Pythian's Google Cloud and Google AI experts to see how our team can help.

Result/Key outcomes

Our PoC solution unlocked the customer's internal data to facilitate accurate and efficient answers to self-service IT requests by employees or contractors in the field. With full implementation of the PoC solution, the customer will be able to:

- Provide instant answers to employees or contractors in the field on a range of important topics instead of making them wait for IT staff to answer their ticket

- Give their IT staff the bandwidth to focus on more value-added tasks that provide more business value

- Scale their IT team in terms of efficiency and effectiveness by leveraging conversational AI technology

About Pythian

Founded in 1997, Pythian is a data and analytics services company that helps organizations transform how they compete and win by helping them turn data into valuable insights, predictions, and products. From cloud automation to machine learning, Pythian designs, implements, and supports customized solutions to the toughest data challenges.

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