



SIEMENS

CASE STUDY

Siemens' Holmes chatbot for central financial closing application aims to solve 30% of user inquiries

Cognitive understanding elevates the employee experience

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We've all experienced the complexities of a digital workplace. You sit at your desk, ready to work. You type in your username, enter your password and then the dreaded error message pops up. Among all applications that run for a company like Siemens AG, some applications have about 30% of all IT help requests dealing with login errors. The longer it takes the help desk to resolve the problem, the more impact it has on productivity. To ease the workload on IT and help get employees back online faster, Siemens AG turned to a cognitive chatbot.

Business situation In search of faster IT support resolutions

Siemens AG is a global technology powerhouse that brings together the digital and physical worlds to benefit customers and society. It creates technology with the purpose to transform the everyday for billions of people – starting with its own employees.

Committed to improving the digital workplace experience, Siemens AG built a chatbot for the global corporate financial community working with the central financial closing application. But even with the best-designed systems, access errors happen. An employee's first reaction is often to quickly search the problem on the company's Wiki page. "The information is there, but people just don't find it. Or these are technical problems which the user can't solve," said Stefanie Seibring, project lead responsible for the Holmes chatbot at Siemens AG.

That's when employees turn to IT for help. Depending on the issue, it could take several exchanges to understand and resolve the issue. Because employees depend on these systems to do their work, any backlogs could restrict productivity.

"We know that a lot of people spend time searching for the information. I have seen statistics where 30% of the workday is wasted searching for the information you need to do your work," said Seibring. "So, the idea was, why not build a chatbot that makes it easier for users to find the information they need for their work?" With a chatbot as the first entry point for users, Siemens AG wanted to ease the time and costs associated with support resolutions.

Solution

Microsoft Cognitive Services offers a clue to a better workplace experience

Siemens AG engaged long-time partner Avanade to help build and deploy "Holmes," a no-code chatbot with an avatar resembling the famous English detective with a pipe. Using [Microsoft Cognitive Services](#) and our Conversational AI Accelerator, we elevated the bot's capabilities beyond just conversational language to include image recognition.



The decision logic used for image interpretation is based on three different pipelines, triggered by how the user sends information on the error they receive and how the custom vision classifier sorts that information:

- Text describing the issue in the user's own language or copied from the error message
- Image with no text, which can be dropped into the chat directly without saving and uploading it first
- Full screenshot that combines image and text

"We found that a lot of people sent screenshots of this error message when the error message is very difficult to type. You might not copy it correctly. We wanted to have a bot that not only does text recognition and intent but also one that recognizes a picture."

Stefanie Seibring

Project Lead, Siemens AG

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Microsoft's Language Understanding (LUIS) is built into the bot to provide a high-quality, nuanced language model. This **Microsoft Azure** conversational AI service applies custom machine learning intelligence to identify valuable information in natural language conversations and interpret user intent, or in the case of image interpretation, classify the error from the image to text conversion pipeline. To render the right solutions, Holmes connects to Siemens AG's Wiki knowledge pool, where it can surface information and then quickly and easily render solutions to the user.

Rather than a chat, Holmes presents solutions in a card carousel format with a selection of the most likely answers to the user's question. It can also return images, asking if the error message is the same, helping to quickly identify the range of potential solutions and allowing the user to choose the best option. Once a logical solution is identified, Holmes provides links to related articles for more information.

"The solution Avanade built on Microsoft is easy to use and understand. It's really simple and very intuitive," confirms Seibring. "Avanade is good at finding out what I want. They always try to understand the problem and find a solution, especially with the multi-intent functionality which was super important for us. I am very happy with our partnership."

Results

Holmes targets answering 30% of support inquiries

Holmes' natural cognitive understanding meets users where they are. It considers their behaviors and expectations in improving the overall workplace experience. As a result, Siemens AG and its employees realized significant benefits:

- **Increased productivity:** Holmes targets to solve 30% of all Competence Center emails dealing with login errors and repetitive questions, reducing the workload on IT employees and getting users back online faster.
- **Cost savings for innovation:** The speed and ease offered by this solution have led to lower IT costs and manpower efforts. These savings can then be reinvested in the company's internal and external innovations.

- **Employee satisfaction:** A modern workplace that continually evolves to meet the needs of employees can help Siemens AG attract and retain talent that will keep the company at the forefront of technology. "We want to attract top talent. One of the ways we can do that is by having a cool workplace with new tools that use digital cloud solutions," said Seibring.

Given the novel technology and the complexity of the task, the current version of Holmes is just the first. Siemens AG continues to train the bot, build its knowledge base and delivery, and add additional helpful functions. "I believe the first car was pretty difficult to drive," noted Seibring. "But we've come a good way. Rather than waiting to see what others are doing and then taking products that are already there, I prefer to lead on this one. Based on what I've seen in the past years and how the bot has developed recently, I believe there's a lot more to come – some things we cannot even imagine."

About Siemens AG

Siemens AG (Berlin and Munich) is a technology company focused on industry, infrastructure, transport, and healthcare. From more resource-efficient factories, resilient supply chains, and smarter buildings and grids, to cleaner and more comfortable transportation as well as advanced healthcare, the company creates technology with purpose adding real value for customers. By combining the real and the digital worlds, Siemens empowers its customers to transform their industries and markets, helping them to transform the everyday for billions of people. Siemens also owns a majority stake in the publicly listed company Siemens Healthineers, a globally leading medical technology provider shaping the future of healthcare.

In addition, Siemens holds a minority stake in Siemens Energy, a global leader in the transmission and generation of electrical power. In fiscal 2021, which ended on September 30, 2021, the Siemens Group generated revenue of €62.3 billion and net income of €6.7 billion. As of September 30, 2021, the company had around 303,000 employees worldwide.

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About Avanade

Avanade is the leading provider of innovative digital, cloud and advisory services, industry solutions and design-led experiences across the Microsoft ecosystem. Every day, our 56,000 professionals in 26 countries make a genuine human impact for our clients, their employees and their customers. Avanade was founded in 2000 by Accenture LLP and Microsoft Corporation. Learn more at www.avanade.com

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