How Eureka is designing the robot vacuum of the future

Arun Krishnan Jan 05, 2022 Share:

Ambient Intelligence

While Amazon won't participate at CES 2022 in person in Las Vegas to prioritize the health and safety of our employees and our partners, we're excited to highlight innovative products like the Eureka NER700 Atlas Orbit vacuum cleaner. The robot vacuum epitomizes the future of ambient intelligence, where technology doesn't reside on one computer – rather it exists across multiple devices and in the cloud, and operates in a way that can be useful without being intrusive.

"According to the New Product Development (NPD) group, with 49% YOY growth over the past year, robot vac is among the fastest growing categories among floor care," says Bonnie Wen, Product Management Director at Eureka. "The pandemic has greatly accelerated this growth. With people spending more time at home, they are looking for products like the Eureka NER700 to meet their hands-free cleaning needs."

Bonnie Wen

Features like AI mapping help robots understand the house layout, map carpeted areas and hard surfaces, and remember the location of the "home" docking station. In addition, the product team ensured that the vacuum's suction power – historically a drawback with robotic vacuums – delivers a powerful cleaning performance. The Eureka NER700 also vacuums and mops floors simultaneously, making for a complete cleaning experience.

"This was a feature that surfaced during customer research over the last year, with customers requesting more from their cleaning tools while spending more time at home," says Wen.

Integrating Alexa with the Eureka vacuum

"It bears remembering that robot vacuums operate in a fairly crowded market," says Wen. "Many of the robot vacuums have been around for years. And here's where the voice comes in. It's one thing to walk up to a vacuum and push a button. However, it's so much easier to ask a robot to clean the house. Voice

Amazon Echo devices, makes the Alexa functionalities and AI-powered innovation available to commercial device makers.

Eureka also developed an Alexa Smart Home Skill for the NER700 Atlas Orbit robot vacuum. Alexa Smart Home skills allow users to control their smart home devices using their voice. Alexa Smart Home Skills enable device makers to utilize an "off-the-shelf" voice interaction model. When a user speaks to Alexa, Alexa interprets the utterance and sends a message to the skill. The skill changes the device's state and makes it perform the desired action, which might include vacuuming the house or sending the robot vac back to its charging station.

"The Alexa smart home voice skill makes it very easy to translate the end user's voice command intent into an actual executable action for our robot vacuum," says Patrick Serrato, Head of Global Ecosystem and Partnerships. "With AVS and Alexa Smart Home Skills, we could concentrate more on integrating more features instead of worrying how each would be supported with voice intent interpretation."

Patrick Serrato

Serrato says that the integration with Alexa was completed and tested in just over two months.

"The incredible support we received from Alexa teams in the United States and the Asia Pacific region allowed our teams to solve issues quicker and integrate Alexa voice control faster."

The future: Eureka and voice

Serrato foresees a world of ambient intelligence where robot vacuum cleaners do much more than clean the house. For example, while cleaning an infant's room, a cleaner might detect that the temperature is too high. It could then communicate automatically with the central air conditioning system to lower the temperature. By using built-in cameras, vacuums could also detect and remove obstacles on the ground that might present hazards to the elderly.

Wen says that these features are no longer the stuff of science fiction. Instead, these use cases will shape how we think about every facet of product design going forward.

"Going forward you will find that the traditional distinctions between what products are supposed to do will blur and even disappear," says Wen. "Rather, we will be thinking of how different products and services can work together to make the lives of our consumers easier. We are looking forward to creating this world of ambient intelligence, and are excited to collaborate with Alexa and Amazon in making this vision of the future a reality."

Resources to help you get started

Determine the right technology path to create connected devices with Alexa Voice Services

Learn how to build a smart home skill

Get help by connecting with a solution provider

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