

Kuri: Startup's personal robot designed to touch your emotions

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If you've been dreaming for years about having your own R2-D2 or BB-8, get ready. Just don't expect your new robot companion to do too much, because you might be disappointed.

A new generation of personal robots and devices is in the works and several are slated to head to homes beginning later this year. Among the more notable is Kuri, a robot developed by Redwood City, Calif., startup Mayfield Robotics.

Due out in December, Kuri, which looks a bit like Eve from the Pixar movie "Wall-E" but speaks in the beeps and boops of R2-D2, is designed to act like a cross between a super-smart pet and a personal valet. It will keep an eye on your house, follow you around, play music on command, and serve as a mobile alarm clock, messenger or documentarian.

Kuri "allows you to live that robot dream," said Mike Beebe, Mayfield's CEO. "Kuri is a real live robot that you can have in your house."

But it's one with distinct limitations. Because it can't speak real languages, it won't replace personal assistants like Siri or Amazon's Echo. Because it doesn't have legs, it'll be stuck on one floor of your house, unless you physically pick it up and take it somewhere else. And because it doesn't have arms, it definitely won't do chores around the house - no folding the laundry or loading the dishwasher.

So you can think of Kuri, which you can pre-order today and will cost

about \$700, as something like an R2-D2 - without all of the loveable "Star Wars" droid's cool hidden accessories and features.

"There's a trillion things you can do," said Beebe. "The art is deciding what you're not going to do."

Mass-marketed consumer robots have been around for at least 20 years. But they've mainly been devices that were limited in function, like Sony's Aibo robotic dog or iRobot's Roomba vacuum, or targeted at particularly markets, like Lego Mindstorms kits, which were designed as educational tools.

But advances in areas like sensors, artificial intelligence and high-speed networks and the development of standardized robotic operating systems are starting to make multipurpose home robots a reality. French startup Blue Frog Robotics has a [personal robot](#) named Buddy that's in the works and was originally due out late last year.

Boston startup Jibo has an eponymously named robot due out later this year that looks like a Google Home device but has a face-like screen that it can turn and tilt in response to people talking to it. And Piaggio, the same Italian firm that makes Vespa scooters, has designed the Gita, which looks like a giant wheel but is designed to serve as a kind of robotic sherpa, following its owners around while carrying their groceries or transporting up to 40 pounds of sundry items home all on its own.

Amid all this hubbub, some analysts and experts expect big growth for the industry in coming years. ABI Research, for example, projects that number of personal robots shipped worldwide will grow from 100,000 this year to 6.9 million in 2025. It projects the market for those robots will swell from \$40 million to \$2.5 billion over the same time period.

"There's a lot of competition in this market that's coming," said Philip Solis, a research director at ABI.

Kuri, which is 20 inches tall, is designed to be smart. It has built-in cameras, microphones and speakers. It has a navigation system that will help it learn the layout of your house, and a facial recognition system that will let it identify individual members of your household. It will be able to navigate around obstacles.

It won't be able to do any manual task, but it can do other things. You'll be able to ask it to wake your son up at a particular time or to remember to play "Happy Birthday" for your wife when she turns a year older. You can also have it "read" a story to your kids - by playing an audiobook or replaying a recording of your voice - or have it - again using your voice - tell the dog to get off the couch. And using an app on your smartphone, you'll be able to drive it when you are away and check to make sure everything's OK at home.

But Mayfield, which is fully funded by German industrial conglomerate Bosch but operates independently, is hoping to attract people to Kuri by tapping into their emotions more than by promising it will do practical tasks. Kuri is intentionally designed to be personable and almost lifelike. You can wake it up when it goes to sleep by stroking its head. It has large "eyes" with shutters that blink and close. It looks at you when you talk to it and can turn its body and face if it wants to point you somewhere. And it will follow you around and will know your routine well enough that if you typically listen to NPR in the morning, it will tune it in unbidden.

Giving Kuri a personality and making it personable came out of discussions with users of Mayfield's early prototypes, said Sarah Osentoski, Mayfield's chief operating officer. They wanted to know not just what it could do when they were away, but how they could interact

with it while they were home.

They wanted "something they could emotionally relate to," Osentoski said.

Kuri grew out of work that Osentoski and others did in conjunction with Willow Garage, the now-defunct robotics lab that tried to jump-start the robotics industry. Kuri runs on ROS, an operating system developed by Willow Garage, and one of the early Kuri prototypes was based on the TurtleBot, a robot design created by the lab.

But while Willow Garage was trying to develop complicated robots with arms that could potentially load your dishwasher, Kuri is decidedly less sophisticated. That's intentional, Mayfield representatives say. They wanted to create a robot that would be less expensive and more robust, Osentoski said.

Narrowing the number of things Kuri can do is also a way for the company to better offer consumers a good experience, said Andra Keay, managing director of Silicon Valley Robotics, a trade group of which Mayfield is a member.

"A robot is a complex system, and we have very high expectations," Keay said. "Robots for the home or entertainment are only going to succeed when they're doing something well, not everything poorly."

But some analysts are skeptical that Kuri will do enough to actually appeal to a wide audience or to be more than a novelty. The fact that it won't answer questions like Amazon's Echo seems like "a missed opportunity," Solis said.

Meanwhile, many of the things it can do - like setting reminders or

-serving as a security camera - can already be done with devices like Echo, webcams like Nest Cam or even just a plain old smartphone, noted J.P. Gownder, an analyst who studies the robotics industry for research firm Forrester. And most consumers either have those devices already or those gadgets cost a lot less than Kuri.

"I don't see anyone saying they must have this in their home," said Gownder. "It's such a novelty for the 1 percent."

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Meet Kuri

What is it? A personal robot.

What can it do? It can serve as a mobile alarm clock, rolling into a particular room at a specified time in the morning. It can remember to wish your daughter happy birthday on her big day. It can keep an eye on the house when you're away. And it can follow you around, playing your favorite music or news channel.

How big is it? It's 20 inches tall and 12 inches wide and weighs 14 pounds.

Who makes it? It was designed by Mayfield Robotics, a spin-off of industrial giant Bosch that is based in Redwood City, Calif.

How much does it cost? \$700.

When will it be available? In December. You can pre-order it now online at www.heykuri.com/.

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