Google Puts Money on Robots, Using the Man Behind Android

PALO ALTO, Calif. — In an out-of-the-way Google office, two life-size humanoid robots hang suspended in a corner.

If Amazon can imagine delivering books by drones, is it too much to think that Google might be planning to one day have one of the robots hop off an automated Google Car and race to your doorstep to deliver a package?

Google executives acknowledge that robotic vision is a “moonshot.” But it appears to be more realistic than Amazon’s proposed drone delivery service, which Jeff Bezos, Amazon’s chief executive, revealed in a television interview the evening before one of the biggest online shopping days of the year.

Over the last half-year, Google has quietly acquired seven technology companies in an effort to create a new generation of robots. And the engineer heading the effort is Andy Rubin, the man who built Google’s Android software into the world’s dominant force in smartphones.

The company is tight-lipped about its specific plans, but the scale of the investment, which has not been previously disclosed, indicates that this is no cute science project.
At least for now, Google's robotics effort is not something aimed at consumers. Instead, the company's expected targets are in manufacturing — like electronics assembly, which is now largely manual — and competing with companies like Amazon in retailing, according to several people with specific knowledge of the project.

A realistic case, according to several specialists, would be automating portions of an existing supply chain that stretches from a factory floor to the companies that ship and deliver goods to a consumer's doorstep.

"The opportunity is massive," said Andrew McAfee, a principal research scientist at the M.I.T. Center for Digital Business. "There are still people who walk around in factories and pick things up in distribution centers and work in the back rooms of grocery stores."

Google has recently started experimenting with package delivery in urban areas with its Google Shopping service, and it could try to automate portions of that system. The shopping service, available in a few locations like San Francisco, is already making home deliveries for companies like Target, Walgreens and American Eagle Outfitters.

Perhaps someday, there will be automated delivery to the doorstep, which for now is dependent on humans.

"Like any moonshot, you have to think of time as a factor," Mr. Rubin said. "We need enough runway and a 10-year vision."

Mr. Rubin, the 50-year-old Google executive in charge of the new effort, began his engineering career in robotics and has long had a well-known passion for building intelligent machines. Before joining Apple Computer, where he initially worked as a manufacturing engineer in the 1990s, he worked for the German manufacturing company Carl Zeiss as a robotics engineer.

"I have a history of making my hobbies into a career," Mr. Rubin said in a telephone interview. "This is the world's greatest job. Being an engineer and a tinkerer, you start thinking about what you would want to build for yourself."

He used the example of a windshield wiper that has enough "intelligence" to operate when it rains, without human intervention, as a model for the kind of systems he is trying to create. That is consistent with a vision put forward by the Google co-founder Larry Page, who has argued that technology should be deployed wherever possible to free humans from drudgery and repetitive tasks.

The veteran of a number of previous Silicon Valley start-up efforts and twice a chief executive, Mr. Rubin said he had pondered the possibility of a commercial effort in robotics for more than a decade. He has only recently come to think that a range of technologies have matured to the point where new kinds of automated systems can be commercialized.

Earlier this year, Mr. Rubin stepped down as head of the company's Android smartphone division. Since then he has convinced Google's founders, Sergey Brin and Mr. Page, that the time is now right for such a venture, and they have opened Google's checkbook to back him. He declined to say how much the company would spend.

This article has been revised to reflect the following correction:

**Correction: December 5, 2013**

An article on Wednesday about Google's increasing investment in robotics, including the acquisition of technology companies related to the field, misspelled the name of one such acquisition, a small design firm that makes high-tech wheels. It is Holomni, not Holonomi.
A version of this article appears in print on December 4, 2013, on page A1 of the New York edition with the headline: Google Puts Money on Robots, Using the Man Behind Android.

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166 Comments
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Paul  Ridgway,CO
I find it interesting that while very one frets about the unemployment numbers google and others are busy replacing as many workers as they can with machines. Unlike jobs shipped overseas, those jobs are certainly never coming back.
Mister Rubin and his cohorts need to read Kurt Vonneguts "Player Piano".
Dec. 8, 2013 at 12:05 p.m.  RECOMMENDED  1

VW  NY NY
I'm sure he'll come up with something--perhaps another idea from Apple.
Dec. 7, 2013 at 3:23 p.m.

jojo  l.a. ca
The number of Pacific bluefin tuna, (one fish that fetched a record 155.4 million yen ($1.78 million) in a Tokyo auction in Jan., dropped 96.4 percent due to decades of overfishing...

those who pursue a vision of an automated labor force put me in mind of these tuna "entrepreneurs"...They will reap greater and greater profits up to the point of...extinction.

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