Toyota to Buy a Stake in AI Firm

By Takashi Mochizuki

TOKYO—**Toyota Motor** Corp. is acquiring a stake in Tokyo-based machine-learning venture **Preferred Networks** Inc., the latest sign that the world's largest auto maker by sales is accelerating its development of self-driving cars.

Toyota said it would take a 3% stake in Preferred Networks for ¥1 billion ($8.2 million), valuing the company at ¥33.3 billion. The deal is expected to close by Dec. 30.

"This will strengthen our partnership as our collaboration has begun to show various results," said Kenichi Murata, a Toyota engineer heading the company's connected car research.

Toyota aims to make some of its cars fully self-driving on highways by around 2020, meaning vehicles would get on and off the highways and change lanes without driver input. That would be a step forward from the current so-called advanced driver assistance system, which helps drivers maintain an adequate distance between cars and park smoothly.

The purchase price indicates a sharp and recent rise in the value of Preferred Networks, which spun out of software developer **Preferred Infrastructure** Inc. in 2014. In August, **Fanuc** Corp. paid ¥900 million for a 6% stake, valuing the venture at ¥15 billion about three months ago. Nippon Telegraph & Telephone Corp. said in October 2014 it paid ¥200 million for less than 10% of the company.

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Toyota's purchase of a stake in Preferred Networks signals its growing interest in developing advanced vehicles.

Competition in autonomous driving technology has been heating up. In addition to auto makers such as General Motors Co. and Tesla Motors Inc., technology companies such as Google parent Alphabet Inc. have been ramping up research and development toward the goal of driverless cars.

Toyota's investment in Preferred Networks follows its announcement in November that it plans to set up a robotics and artificial intelligence research center in Silicon Valley by January, pouring $1 billion into the project during the next five years. Mr. Murata said the venture's engineers are likely to work with people in the planned new institution.

Preferred Networks has been a partner with Toyota since October 2014, but the two companies haven't released details of their progress. They said Preferred Networks will show an exhibition in Toyota's space at January's Consumer Electronics Show in Las Vegas, demonstrating how artificial intelligence can help teach cars not to crash.

"We hope our deep-learning expertise will contribute to making automated driving technology safer," said Toru Nishikawa, chief executive of Preferred Networks.

Focusing on machine-learning technology, including "deep learning," a branch of artificial intelligence that enables machines to learn on their own without much human supervision, Preferred Networks has entered many partnerships with major companies, including Panasonic Corp., Nvidia Corp. and Cisco Systems Inc. since the company's launch last year.

The partnership with Fanuc has been developing machines that can figure out how to assemble devices and even repair other robots.

"We are thrilled with our partnership with Preferred Networks as we aim to change how manufacturing is being done," Kiyonori Inaba, general manager of the robot business at Fanuc, said recently.

At a recent robotics exhibition in Tokyo, the two companies showed off their early achievements.

In one demonstration, a Fanuc robot powered by the venture's deep-learning software learned in eight hours how to pick up components from a box most efficiently, a program a veteran engineer would have taken days to write.

"The achievement is impressive because the technology can be applied to many other industrial machines, and that would quickly change how we work," said Toshimitsu Kawano, managing director of Beckhoff Automation Japan.