Family lawns in Europe, U.S. "mow-tivated" by Chinese robots

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This photo taken in October 2024 shows Segway robotic lawn mower Navimow showcased in Equip Exposition held in Louisville, the United States. (Segway-Ninebot/Handout via Xinhua)

BEIJING, Dec. 9 (Xinhua) -- Davide Campigotto, a 35-year-old father in Italy, was enjoying chucking a Frisbee around with his children in their courtyard, while a wire-free robotic lawnmower tamed and trimmed the grass of his lawn.

This product, which receives minimal consumer interest in China, has unexpectedly soared in popularity in European and U.S. markets this year.

A Beijing-based startup behind the notable commercial success serves as the latest example for the business acumen of Chinese entrepreneurs in exploring global market opportunities.

At CES 2024 at Las Vegas in January, Willand unveiled its second-generation robotic lawnmower, priced from 999 U.S. dollars. Branded as Segway, this flagship product series Navimow-i immediately propelled the firm's swift expansion.

Willand's sales in the first three quarters hit 595 million yuan (about 82 million U.S. dollars), up 380 percent year on year. On Amazon Prime Day in July 2024, Navimow topped global sales and growth charts for robotic lawn mowers in every price category.

Willand's robotic lawn mowers are projected to exceed an annual sales volume of over 100,000 units, according to the Beijing company.

This robotic mower operates at speeds of up to 0.6 meters per second, and can finish mowing a 120-square-meter lawn in approximately one hour, even under weak satellite signal conditions.

"I have silver maple trees covering 90 percent of my yard," Amazon buyer "Aukauk" from the United States wrote about his buying experience. They installed an antenna under a large silver maple in their front yard, and the mower mapped for best satellite signal.

"The Navimow is an impressive computer navigation system atop a capable grass cutter, with a satisfying app. And it makes my yard look good while I do other home projects," said the verified buyer.

Willand is gearing up to unveil its next-generation lawn mowers in 2025. They will double the average mowing efficiency with improved movement speeds, longer battery life, quicker charging times and larger cutting deck sizes, according to the company.

SEIZING OPPORTUNITY

In 2019, Ren Guanjiao conceived the idea of a novel lawn mowing robot. He was then a robotic expert at Segway-Ninebot, a Chinese innovator in electric mobility for short distances.

"In the United States, lawns often require mowing 2 to 3 times monthly at the height of summer, totaling around 70 hours of lawn care per year," Ren told Xinhua at an incubation park in the northern suburb of Beijing. "Hiring professionals for this task can incur labor costs of up to 60 U.S. dollars per hour."

Ren circulated a set of questionnaires in overseas Chinese communities and did some field investigations in Europe prior to the COVID-19 outbreak. "In Munich and Amsterdam, we occasionally peeped through fence gaps to watch how local families worked in their yards."

He found that high-carbon-emitting petrol-burning mowers are being phased out in favor of eco-friendly electric robotic mowers. However, the prevalent wire-guided lawn mowers at that time had an obvious drawback: the necessity to bury a wire at the boundary to power the machine.

"The lawn mower itself may start at 300 dollars, but due to high labor costs, hiring someone to bury the wire can cost additional 500, taking 4 to 6 hours," said Ren. He anticipated a tenfold increase in the market potential for lawn mowing robots.

Ren, a graduate of Beihang University, which is renowned for its expertise in aeronautics and astronautics, quickly embarked on a new project to replace traditional wiring systems with satellite navigation technology.

The prototype Ren's team developed was driven by the real-time kinematic (RTK) positioning technology, which is compatible with GPS, Beidou and GLONASS.

Houseowners only need to walk the robot around the perimeter once for it to automatically create a "virtual boundary," and then the machine knows its operational boundaries. The process takes less than an hour.

The final product is equipped with a field-of-view camera with built-in AI algorithms, which can detect over 150 types of obstacles in the garden to ensure a good avoidance capability. After completing the work, the robot returns to the charging deck to recharge its lithium battery.

"I chose Navimow because it was quite easy to install, and it's also really easy to set up a schedule of cutting during the week," said Campigotto.

A smart lawn mower capable of path recognition has an additional benefit, according to Ren. It can yield uniformly textured lawns, while conventional mowers with random movement patterns can make the final finish look haphazard.

"It's like you have a soccer court because the grass is always perfect, always at the same height," said Campigotto.

Gardner's World, a UK publication under BBC, has honored Navimow-i as the best robotic mower for wire-free mowing in 2024.

ENGINEERING DIVIDEND

Founded as a spin-off of Segway-Ninebot in 2021, Willand has a team of about 300, with nearly 200 specialists in technical development and support. A predominantly engineering workforce is a hallmark of startups sprouting in China.

China has cumulatively cultivated over 140,000 specialized, high-end and innovation-driven small and medium-sized enterprises (SMEs), and over one-tenth have evolved into "little giant" firms. These research-centric enterprises are increasingly becoming a driving force behind the country's new round of economic growth.

Ren credited the popularity of Willand's robotic lawn mowers not only to his business insight, but also to the "engineer dividend" in China. Statistics show that by 2020, China boasted more than 17 million engineers, ranking it among the world's leaders.

"Chinese factories used to replicate existing foreign products at lower costs. Now, with demand identified, our engineers are adept at creating them," said Ren.

Moreover, the robust electronic industrial chains in the country's Yangtze River Delta and Pearl River Delta regions have positioned Chinese companies at the forefront of rapidly transforming their innovative concepts into reality.

These regions, known for their advanced manufacturing and technology hubs, have become instrumental in driving innovation and efficiency, thereby enhancing the competitive edge of Chinese manufactured goods on a global scale.

Now, a growing number of Chinese startups, including Shenzhen-based Mammotion Tech and Dreame, are joining the trend of robotic lawn mowers development, and achieving good sales performance.

Like lawn mowers, a wide range of new products from China have garnered consumer acclaim on overseas e-commerce platforms. They include robotic vacuums, compact kitchen appliances, personal care devices, smart security cameras, intelligent door locks and electric bikes.

"Going forward, Chinese designs and creations becoming global hits will be more commonplace," said Ren with a proud smile. ■

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