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# Robots are a boon for the economy

Robotics is at the heart of the race for 21st century economic leadership, the authors write. | AP Photo Close

By HELEN GREINER & JARED L. COHON | 8/19/11 4:21 AM EDT

Manufacturing made the United States a global economic superpower over the past 50 years. Most people don't realize that a key reason for this success was the early advances in robotic technology that allowed U.S. factories to produce more quickly and efficiently. In fact, the world's first working robot joined the General Motors assembly line in 1961, working with die-casting machines too hot for human touch.

Just as automation and innovation in manufacturing made the U.S. the dominant force in the last century, advancements could prove seminal in determining the next century's superpower. But the U.S. now lags behind other nations' investments in the next big manufacturing breakthrough — a new generation robotics technology.

We were at President Barack Obama's recent announcement of a National Robotics Initiative, a federal investment accelerating the development and use of robots that work

with people. This effort is designed to move robots out of the lab and into the U.S. economy — creating jobs, preserving our manufacturing base and ensuring we remain competitive globally.

Japan, South Korea and the European Union have already eclipsed the U.S. in commercial robotics investment — making research commitments totaling $2 billion collectively. In the absence of investment at this pivotal moment, the U.S. risks becoming reliant on other countries for robotics technology. The NRI is determined to ensure that breakthroughs and the jobs they generate happen here.

Small businesses now produce that vast majority of robotics innovation. Federal investment is crucial to ensure these companies continue to thrive and spur our economic recovery. Many are working with our leading universities, where research and innovation helps create new technologies and spur new industries and jobs.

Take Drew Greenblatt, the chief executive officer of Marlin Steel Wire, a steel wire basket manufacturing company. In 1998, his fledging business employed 18 people, each earning approximately $6 per hour. In 2002, facing stiff competition from cheap, foreign labor, Greenblatt invested in robotics. What seemed like a risky decision has paid huge dividends. Revenues increased six-fold, employee salaries have jumped to $24 per hour, and he hired 12 new employees. National unemployment is more than 9 percent, but Marlin Steel has posted four new positions this year alone. Perhaps most significant, Greenblatt is exporting his wire baskets to China and 34 other countries.

Advances in robotics allow a new generation of companies to perform mundane and repetitive tasks in dangerous and inaccessible environments. They operate more efficiently, decrease losses and lower the risk of worker injury. Robots level the playing field — offsetting cheap labor in countries like Mexico, China and India.

When we retain manufacturers, we bolster the designers, engineers and producers of the infrastructure that forms our innovation base. Not far behind are maintenance, oversight and sales jobs, as well as employment in the supplier base.

Robotics allows manufacturers to increase both revenue and employment. Like the computer industry, robotics is an economic engine, creating businesses and better paying jobs. The industry is expected to grow from $3.3 billion in 2008 to $85.5 billion in 2018 and $100 billion in 2020, according to the International Federation of Robotics. In today's economy, few other sectors can project such exponential growth.

Robots are also being used to expand human capacity and extend our reach, tackling some of today's most difficult challenges. In the aftermath of Japan's devastating earthquake and tsunami, U.S.-made robots were used to inspect the damage at the Fukushima nuclear power plant, a job too dangerous for humans to perform. In the wake of the Deepwater Horizon explosion, robots were deployed to contain the flow of oil into the Gulf of Mexico.

On the battlefield, robots in the form of unmanned vehicles serve as eyes in the sky for troops; and on the ground robots are used to identify and safely disable improvised explosive devices. In the operating room, doctors are using sophisticated robotic devices

to perform complex and minimally invasive surgeries, leading to a lower risk of infection, quicker recovery and shorter hospital stays. This lowers health care costs — one of the greatest fiscal challenges facing our nation.

Robotics is at the heart of the race for 21st century global economic leadership. Now more than ever, industry, academia and government must work together to win that race, preserving our role as a leader of global innovation. It's a race we cannot afford to lose.

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