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Robotics 2020: a challenge and a target for Europe

Professor Bruno Siciliano specialises in control and robotics at the University of Naples Federico II and is a past president of the Institute of Electrical and Electronics Engineers Robotics and Automation Society. He believes that robots can make Europe more competitive, creating jobs.

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Traditional industrial robots have had a vital role in maintaining the competitiveness of the European manufacturing industry. While this will continue and widen, it is robots outside of these traditional functions that will have increasing importance and provide opportunities for rapid market growth. The significant short- to medium-term opportunities will be in areas such as agriculture, healthcare, security and transport, while in the longer term robots will enter almost all areas of human activity including the home.

The use of industrial robots in large manufacturing companies is generally well established and understood. To expand the market, smaller scale and small to medium-sized enterprise (SME) manufacturing needs to embrace smart robotics to maintain efficiency and create jobs.

Raising the output and efficiency of SME manufacturers will have a significant impact on Europe's manufacturing and employment capacity. In turn, this will increase overall employment as companies expand into markets considered inaccessible given Europe's comparative labour costs. Increasingly, Europe will not only be competing against low-wage economies, but also highly automated ones. Leadership in robotics technology will be a key differentiator of market share in many sectors.

These smart robot technologies and their integration into existing product markets will enable the exploitation of latent potential for a wide range of European manufacturers and service providers. In food security, autonomous transportation, automated farming and livestock management, as well as in improving healthcare delivery, and environmental monitoring, robots have the potential to provide cost-effective services, and enable the efficient delivery of high-value services.

Sustained investment

Robots will transform almost every industry and service sector. Europe has the potential to lead this process, but this requires sustained investment in research, innovation, companies, and in the infrastructures needed to integrate robotics technology within our systems and society.

At its completion, the EU's 2007-2013 funding programme FP7 directly funded some 130 robotics-based research projects involving around 500 organisations with total grants of some EUR 536 million. Other funding with elements related to robotics amounted to some EUR 170 million. This unique level of investment has yielded a vibrant and active research community within Europe both in academia and industry. Europe therefore has a strong basis on which to innovate and create. The focus of the next funding programme, Horizon 2020, concentrated closer to the market and encompassing innovation, will help to leverage this advantage for the European robotics community as new markets and service opportunities are created.

'Robotics technology will become dominant in the coming decade. It will influence every aspect of work and home. Robotics has the potential to transform lives and work practices, raise efficiency and safety levels, provide enhanced levels of service, and create jobs. Its impact will grow over time as will the interaction between robots and people.' - This is the vision of Robotics 2020, an initiative containing the Strategic Research Agenda (SRA) for Robotics in Europe drafted by the European Association of Robotics (euRobotics aisbl) along with the advent of Horizon 2020.

Robotics 2020 will lead to a public-private partnership (PPP) to link the science base to the marketplace, a connection that ultimately benefits society. It aims to help Europe attain a worldwide leading position in the robotics market across all domains. It should also help policymakers resolve the legal and ethical issues which still surround the use of robots in society.

Helped by initiatives such as the PPP, robot technology should become increasingly prevalent, helping to solve Europe's societal challenges, and create new jobs.

The Robotics PPP was launched on 17 December 2013.

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