

Shaping Austria's future positively with Robotics and Artificial Intelligence

White Paper of the Austrian Council on Robotics and Artificial Intelligence - Executive Summary

Vienna, November 2018

The use of Robotics and Artificial Intelligence (AI) in various areas of our lives will lead to fundamental changes in society. Robotics and AI have the potential to solve major challenges in many areas of application: Dangerous, monotonous, repetitive and unhealthy or exhausting activities can be performed by robotic systems. In the field of health, for example, AI can facilitate early detection and treatment of diseases and robots can support the care of the elderly. The use of Robotics and AI will strengthen the international competitiveness of our companies and therefore contribute to employment.

However, these opportunities come with complex and difficult challenges that need to be identified and addressed now. These new technologies will not only lead to changes and new demands in the world of work, but will also raise ethical, legal and social issues which have to be discussed and solved by Austrian policy makers.



Austrian Council
on Robotics and
Artificial Intelligence

We posit the following three cornerstones for the Austrian Robotics and AI Strategy



1. Smart Governance

All Austrian citizens should benefit from Robotics and AI technologies.

We are convinced that a broad participation of all stakeholders, but especially of Austrian citizens in the strategy process is necessary in order to increase the acceptance of these new technologies. Accordingly, it will be crucial that people's needs and fears are taken seriously.



2. Smart Innovation

We need an effective research, development and investment policy in order to take advantage of the numerous possibilities offered by Robotics and AI and to open up new markets and fields of applications. At the same time, it will be necessary to consider the small and medium-sized structure of the Austrian economy. This will strengthen the Austrian economy and uphold employment numbers and prosperity.



3. Smart Regulation

A stable and secure legal framework is fundamental for the trust of economic actors and the positive development of markets. **The use of Robotics and AI must ensure the safety of humans and must comply with our ethical standards, fundamental rights of humans and European values.** To the extent that existing norms and standards are not sufficient to ensure this, new norms and standards have to be developed without unnecessarily inhibiting innovation. Therefore, we need new and creative ways to mitigate the tension between innovation and regulation.

In this White Paper, we identify, based on the current state of research, four fields of action that we see as a priority for the development of a smart strategy for Robotics and AI:



**Technology, R&D
and Economy**



**Workplace and
Qualification**



Society and Law



**Awareness Raising,
Communication &
Public Relations**

In these four fields of action, the White Paper addresses challenges and specifies initial recommendations for action. These serve as a source of inspiration to initiate a corresponding strategy process and are briefly summarized here:

Smart Governance

- Due to the complexity and the speed of technological developments, the Council recommends an incremental strategy process (“strategizing”) with institutionalized learning processes and feedback loops.
- The strategy process should include continuous research and technology monitoring.
- The Council recommends broad involvement of stakeholders in affected areas of action (e.g., research, technology development and production, economy, education and skills, health, safety, housing, mobility) in this strategy process.
- The Council recommends strong networking with the ongoing strategic activities at European level (European AI Alliance and AI High Level Expert Group).
- The Council recommends broad participation of Austrian citizens in the development of the Austrian Robotics and AI strategy to inform, educate and increase public acceptance. For example, the "Montreal Declaration on Responsible AI" can be used as a reference.

Smart Innovation

- The Council recommends targeted and significant public investment and innovation support activities in robotics and AI technologies, as well as the provision of infrastructure for the use of these technologies.
- The Council also recommends launching targeted measures for the qualification and training of professionals. In addition, extensive requalification measures must be encouraged for employees.
- Due to the technological challenges and the unclear technology assessment, it is intended to identify as soon as possible industries and application areas (yet to be defined use cases) which allow the rapid implementation and realization of robotics and AI potential and facilitate rapid learning processes.
- In the selection of use cases, the controllability of the framework conditions must be considered. The Council recommends to differentiate between unproblematic and sensitive areas of application. For sensitive application areas with high risk and unclear technology assessment, "sandboxes" and "testbeds" should be set up, which enable rapid learning, for all involved stakeholders (research and development, business and politics), and rapid knowledge transfer.
- The experiences from the use cases, influenced by continuous reflection procedures and other feedback loops, should be used for the development of effective guidelines for state support measures and development and innovation policy.

Smart Regulation

- The Council recommends reviewing the existing ethical and legal framework for these changes and, where appropriate, adding new rules and standards to ensure the safety of using robotics and artificial intelligence for human beings and society. This should be done in close coordination with developments and decisions accomplished by the European Commission.
- The Council recommends the development of appropriate certification and auditing/compliance tools for Robotics and AI technologies.

