Committee terms of reference

Coordinated and accelerated policy development linked to fourth industrial revolution technologies

ToR 2018:85

Decision at a government meeting on 16 August 2018

Summary

Sweden and the world are facing major societal challenges, including climate change, the environment, health and digital transformation. The rapid advances in technology, often referred to as the fourth industrial revolution, are unleashing innovation in many sectors that will help resolve these societal challenges in a resource-efficient manner. At the same time, demand is increasing for proactive policy development, as barriers and uncertainties risk hindering these advances.

It is the Government's ambition to have excellent conditions throughout Sweden for developing new and innovative solutions, and new business models. To improve utilisation and better harness the potential unleashed by digitalisation and innovation, the Government is establishing a Committee focused on cross-sectoral policy development.

The Committee will help the Government to identify policy challenges, contribute to reducing uncertainty surrounding existing regulations, and accelerate policy development linked to fourth industrial revolution technologies in the application domains of precision medicine, connected industry, and connected and autonomous vehicles, vessels and systems. A reference group, with representatives of the Government Offices, government agencies, regional stakeholders, business and organisations experienced in policy development will be linked to the Committee.

The Committee is to submit annual interim reports on its work to date by 31 December 2019 and 2020. The final report is due by 31 December 2021.

Background

Rapid and profound technological advances

The world is witnessing a rapid rate of change and accelerating advances in a number of technological fields. Digitalisation and automation are impacting almost all sectors through new solutions, applications and services. The development of global value chains is affecting national and regional economies, and technological advances are creating opportunities to further enhance the close links between service production and manufacturing.

The fourth industrial revolution builds further on the digital revolution and is characterised by constant connectivity, smaller and more powerful sensors, artificial intelligence and machine learning. Such technologies, in combination with the increasingly powerful computational capabilities, are accelerating the development of applications in domains such as precision medicine, blockchains, connected and autonomous vehicles, vessels and systems, and biotechnology. In summary, fourth industrial revolution technologies have the potential to radically alter our societies and the way people live their lives.

These technological advances also have the potential to unlock solutions to a number of global societal challenges, such as climate change and the environment, health, and digital transformation. At the same time, important issues are emerging that must be dealt with. These encompass information and cyber security, national security, liability and privacy issues, as well as other aspects such as ethics, business and compensation models, and the risk of digital divides. It is crucial for the future to ensure that the opportunities offered by new technologies are harnessed in the best possible way and that such advances take place in a way that benefits all citizens and contributes to an inclusive society.

Policy development challenges

This rapid pace of change also challenges existing policy development processes. Policy development is found as an umbrella term in various contexts. In these terms of reference, 'policy development' refers to the development of policies, such as regulatory frameworks in the form of laws and other regulations, EU law and international law and their application, and guidelines, standards, financial instruments and processes. Moreover, a number of relevant issues are multidisciplinary, touching on several policy areas. Collaboration and coordination are particularly needed to efficiently deal with barriers and new proposals, both internationally and regionally between government agencies, organisations, higher education institutions, institutes and businesses, and at EU level and internationally.

The Swedish tradition of collaboration is advantageous for addressing issues from a holistic perspective. Sweden has leading companies in many sectors, and Swedes are generally early adopters of new technologies and have trust in the public sector and government agencies. The Government has established five innovation partnership programmes: next-generation travel and transport, smart cities, circular and bio-based economy, life sciences, and connected industries and new materials. They are described in the bill 'Collaborating for knowledge – for society's challenges and strengthened competitiveness' (Govt bill 2016/17:50). Policy development needs are identified within these programmes and the framework of the Government's Testbed Sweden initiative, and by research institutes. They serve as a valuable source of background material regarding the opportunities arising from technological advances and their consequences. The needs are often both complex and cross-sectoral, and the Government's capacity has to be strengthened in times of rapid change.

Examples of ongoing efforts, internationally and in Sweden

Technological development is global, and discussions are being conducted around policy development at EU and other levels. One example is the European Commission Staff Working

Document *Liability for emerging digital technologies* (SWD [2018] 137 final), which notes that, like other transformative technologies, the Internet of Things and autonomous systems raise questions of liability that require well-adapted legal frameworks. The Staff Working Document highlights the need for frameworks and protocols that incite innovation and are predictable.

The newly established World Economic Forum Centre for the Fourth Industrial Revolution in San Francisco aims to advance private-public collaboration in policy development. The Forum has invited Sweden to take part in this work by partnering with the Centre in San Francisco and participating in international projects. In addition to expertise, the Forum offers an interesting partnership model and, not least, a global platform for discussion and the dissemination of findings. Countries such as Japan, China and India are already partnering with the Forum. In summary, the importance of international cooperation is increasing with a view to understanding and learning more from each other, and to creating the conditions for Sweden and Swedish companies to influence policy-making both in Europe and globally.

In its *OECD Reviews of Digital Transformation: Going Digital in Sweden* (DSTI/CDEP[2018]4), the OECD highlights the need to reinforce policy labs and regulation sandboxes, where different stakeholders in society collaborate with the aim of strengthening Sweden's ability to achieve its goal of being a world leader in harnessing the opportunities offered by digitalisation. The OECD notes, for example, that digitalisation creates many new opportunities but also necessitates integrated ways of working to accelerate the development of frameworks and regulations. Digitalisation requires a multidisciplinary perspective, and the OECD's recommendations include more cooperation, better coordination and a clearer mandate for government agencies to collaborate with business to foster the development of new business models and innovation.

Work is under way, for example, in the transport sector in Sweden to promote policy development in new technological fields. In March 2018, the Inquiry on self-driving vehicles

presented its final report ‘The path to automated driving – market introduction’ (SOU 2018:16), in which the Inquiry reviews relevant regulatory frameworks. The Inquiry also describes the conditions needed to begin using and developing automated vehicles on the roads over the next few years. The Inquiry highlights, for example, the special challenge of dealing with regulatory issues for new technologies and new application domains which are not yet fully developed or in use and which create the need for new approaches to policy development.

Finally, the role of the public sector and its importance as an active co-creation agent in innovation processes has been highlighted within the framework of the different innovation partnership programmes and the National Innovation Council. This has led to greater focus on the public sector’s ability to identify needs and propose changes in regulatory frameworks, applications and structures. What is required from administrations to support these processes has also been discussed and includes feedback loops between system stakeholders, regulation enforcers (government agencies) and regulation setters (government agencies, the Government and the Riksdag). Regulatory authorities in particular are pursuing policy development projects and monitoring the technological advances in each field. The need for accelerated policy development in multidisciplinary fields has been identified as an important parameter for enhancing Sweden’s competitiveness, and thus paving the way for greater investments, exports and more job opportunities.

Remit

Using a cross-sectoral approach, the Committee will promote policy development that contributes to creating favourable conditions to enhance competitiveness and the inclusive, secure, safe and efficient use of new solutions, applications and services in society.

The Committee’s work will strengthen the Government’s capacity to manage complex and multidisciplinary issues, with particular focus on issues where existing policies, or lack thereof, restrains or hinders innovation. Fostering increased

cooperation in order to accelerate policy development work in priority areas is imperative. Work currently under way to stimulate innovation must be harnessed and account must be taken of the requirements so as to safeguard Sweden's security.

The Committee's work will primarily be based on the priorities and findings of the Government's five innovation partnership programmes and fourth industrial revolution technologies. The work will initially focus on multidisciplinary and policy-development initiatives linked to the application domains of precision medicine, connected industry, and connected and autonomous vehicles, vessels and systems. The Committee's work has been defined so that it will not include digitalisation of the public sector or tax and social security contribution issues.

What the Committee will do

Based on its aim of promoting policy development, the Committee will contribute to creating favourable conditions for innovation and enhanced competitiveness throughout the country by:

- conducting in-depth analyses of potential legislative barriers or other uncertainties concerning existing policies;
- surveying the need for necessary adaptation of regulatory frameworks, where relevant;
- continuously delivering policy-development proposals to the Government;
- fostering dialogue between relevant government agencies, the Government Offices, regional stakeholders, organisations, higher education institutions, institutes, and the non-profit and business sectors to ensure effective policy development collaboration;
- coordinating its proposals with others, but also building further on ongoing policy development initiatives within the framework of the Government's innovation partnership programmes, agency initiatives and various testing and demonstration environments (testbeds); and

- collaborating with international stakeholders, such as EU bodies, the OECD, the World Economic Forum and its Centre for the Fourth Industrial Revolution, and other countries, such as those that Sweden has innovation partnerships with.

The Committee's structure

Committee members will have specific policy-development experience in the public and private sectors, multidisciplinary experience and a good understanding of technological opportunities and challenges. Judicial expertise should also be represented.

The Committee will be assisted by a secretariat that, following agreement with the World Economic Forum, may place a member of staff at the Forum's Centre for the Fourth Industrial Revolution.

Experts in relevant fields will also be linked to the Committee, alongside a reference group comprising representatives of business, higher education institutions and organisations of relevance based on the issues addressed by the Committee, and representatives of government agencies, the Government Offices and other public stakeholders. The reference group will assist the Committee in setting priorities.

Impact assessments

The Committee will report on the implications of its proposals in line with the Committees Ordinance (1998:1474) and the Regulatory Impact Assessment Ordinance (2007:1244).

The proposals will be analysed from a gender perspective and must be specially justified if they are not considered to promote gender equality. The proposals will also include climate and environmental analyses, an assessment of consequential amendments to other legislation, economic calculations and an analysis of the proposals' impact on the internal market, if relevant. Moreover, proposals in the transport area will take the transport policy objectives into consideration. The proposals' costs and financial implications will be analysed

and reported. If the proposals involve increased costs for central government, county councils or municipalities, financing proposals will be presented.

Contacts and reporting on the remit

The remit requires regular dialogue with the relevant stakeholders in the Swedish innovation system. The work will therefore be carried out in dialogue with the relevant government agencies, the Swedish Association of Local Authorities and Regions, representatives of innovators and companies, and representatives of employer and employee organisations, the non-profit sector, and relevant user and industry organisations.

The Committee will work in close dialogue with the Agency for Digital Government, Growth Analysis (Swedish Agency for Growth Policy Analysis), the Swedish Agency for Economic and Regional Growth, the Swedish Transport Agency, and Vinnova (Sweden's innovation agency), which conduct policy-development projects with external stakeholders within the framework of their regular activities. The Committee will also share experiences with relevant international stakeholders.

Using outward-looking and inclusive working methods, the Committee will actively foster the creation of favourable conditions to ensure its work gains traction. The Committee will also use various methods to spread knowledge about issues concerning the remit. The Committee will consider ongoing efforts of relevance to the remit.

Based on the Government's priorities, the Committee's initial areas of focus may be changed or expanded over time through supplementary terms of reference.

The Committee will present a plan for its future work by 15 January 2019. The plan will include a description of the Committee's intended working methods, and timeframes and forms for the Committee's regular reporting of its work. The Committee will also submit annual interim reports of its work to date by 31 December, in which it will also propose new or changed areas of focus. The final report is due by 31 December 2021.

(Ministry of Enterprise and Innovation)