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Why Sweden must manage accelerating technological development

The pace of technological development is rapid and accelerating. The boundaries between the physical, digital and biological worlds are blurring. Technologies from various areas are being combined and used in new areas of application. This has resulted in advancements in fields such as robotics, artificial intelligence, biotechnology and autonomous vehicles.

Technological development can contribute to improving people's quality of life and creating solutions for sustainable global development. At the same time, questions of responsibility and integrity must be managed and security safeguarded. Technological development raises questions about business and compensation models, increased digital divides and social exclusion.

A major challenge of current development is that other areas do not change at the same rapid pace. Regulatory frameworks, public administration, organisations and people are unable to keep up. This can entail risks for individuals, society and the environment. There is also a risk that the solution to one problem may create others.

"Think about it, the pace of change has never been this fast, yet it will never be this slow again."

- Justin Trudeau, Prime Minister of Canada, Davos 2018

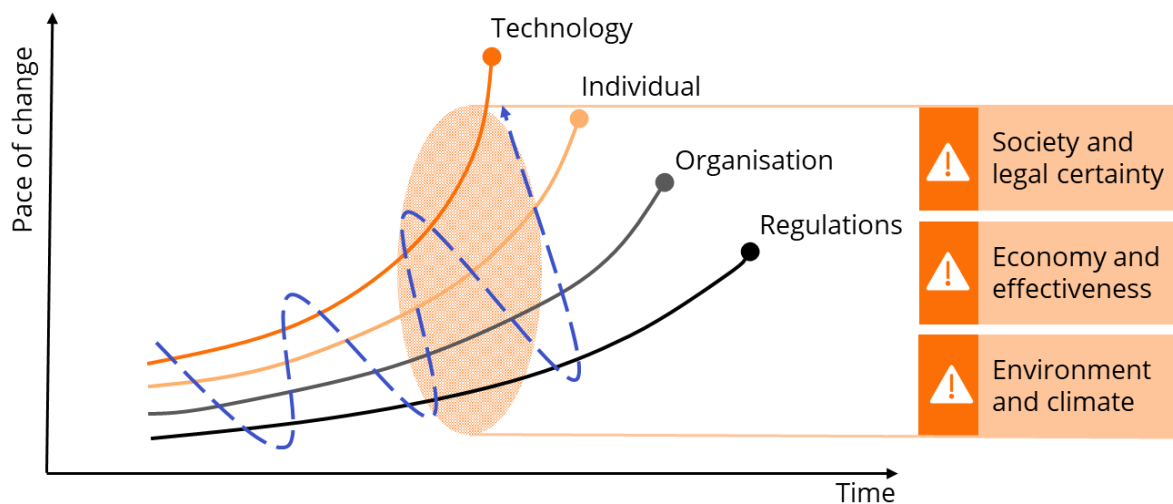


Figure 1. The ability to manage change affects the possibility of benefiting from new technology and managing its risks.

Without measures, risks arise

Individuals and organisations can adapt relatively quickly to new technology. Adapting regulatory frameworks, on the other hand, is a slower process. This affects the possibility of benefiting from new technology and how the risks associated with technology are managed or not managed. Without measures, the gap between technological development and adaptation will widen, creating new risks or compounding existing ones.


Risks to legal certainty

Existing regulatory frameworks that do not address the challenges of new technology could not only impeding innovation. Rapid technological development without relevant regulatory frameworks could also result in legal uncertainty and individuals having difficulty foreseeing how applicable provisions may affect their legal position and adapting accordingly.

Ultimately, such uncertainties may have consequences for democratic and other constitutional freedoms and rights. For example, facial recognition combined with AI may disclose information subject to the individual's right to privacy. Technology may also enable undesired surveillance and various actors to operate covertly to influence opinions or create tensions between groups in society.

Risks to the environment and society

In connection with historical technological shifts, it has become clear that the shift involves much more than the technology itself and that it is crucial to highlight and manage consequences for individuals, business and the environment. Without appropriate measures, people, animals and nature are at risk. Moreover, there is the risk that a lack of regulatory frameworks or regulations that are not fit for purpose will pave the way for undesirable new solutions.



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New technological solutions have the potential to reach many people in a short time. It is therefore important to ensure that certain individuals or groups of individuals are not excluded from society or a company's services due to a lack of knowledge about, or access to, technology. Those who control technology have power over other people's daily lives. For this reason, regulators and other public sector actors have a responsibility to ensure that technology is not abused or used by actors seeking to harm society or individuals.

Risk of resources not being used effectively

Regulators and those who interpret or issue permits based on regulatory frameworks need to understand and follow technology development. In the same way, technology developers need to understand regulatory frameworks. Collaboration, knowledge exchange and mutual understanding are required for relevant and effective work.

Developing regulatory frameworks through democratic influence takes time, but guarantees regulations that are fit for purpose and legally certain. Long lead times in combination with accelerating technological development mean that regulatory amendments can quickly become outdated. For the innovator, there is also the risk of investors choosing other countries if the Swedish regulatory system is outdated.

Improve ability to manage accelerating technological development

Technology and regulatory frameworks need to be developed in tandem to create good conditions for innovation and competitiveness while the development and dissemination of new technologies take place safely and securely. Laws, ordinances, guidelines and standards need to be developed continuously and step-by-step to enable the use of new technologies and new business models, while steering? development towards long-term societal benefit.

Collaborative and innovative working methods are needed to manage accelerating technological development while creating possibilities to achieve the Sustainable Development Goals (see *Komet informs 2019:01*). A key part of this is creating conditions for testing in a real-world environment (see *Komet informs 2020:33*). Work related to testing should clarify the need for development and adaptation of new solutions, working methods and regulatory frameworks, while involving public sector actors, individuals and businesses. The main purpose of testing is to enable swifter learning.

New working methods are needed to achieve the goals of the 2030 Agenda.

The United Nations stresses that we must increase the pace of innovation and introduce new technological solutions more quickly to achieve the Sustainable Development Goals of the 2030 Agenda. To ensure the stable development of society, Sweden needs to manage the opportunities and challenges associated with rapid technological development.



Historical retrospective: different strategies to deal with new technology

In the 1800s, the regulatory framework in the United Kingdom required a person holding a red warning flag to walk in front of motorised vehicles in densely built-up areas (Locomotive Act 1865). The Act was in force for 30 years and played a role in the British transport sector developing more slowly than the corresponding industry in other countries.

A different approach was applied when genetic engineering began in the 1970s: the research community introduced a moratorium. Researchers agreed to temporarily refrain from conducting experiments before they had established common rules. They wanted to ensure that the method could not be used in a way that would constitute a threat to humanity. When activities began, research was conducted under strict restrictions.

Source: Locomotives Act 1865, legislation.gov.uk, The National Archives, and Att spränga gränser. Bioteknikens möjligheter och risker [Breaking boundaries. benefits and risks of biotechnology] (SOU 2000:103), pp 171-172