

Innovation-friendly regulation: Current state and good practices

Executive Summary

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Abstract

Rapid technological development and the need to find solutions to societal challenges call for new regulatory approaches. Regulation has become an increasingly important tool for innovation policy, and various innovation-friendly regulatory practices have been introduced in different countries in recent years. Despite some advancements, the innovation friendly regulation is still a novel subject, not widely practiced and the practical mechanisms and instruments are not well understood.

This document summarises the main conclusions and recommendations of "Innovation-friendly regulation: Current state and good practices"¹, a report published in Finnish as part of Government's Analysis, Assessment and Research Activities in May 2020. The project was conducted by 4FRONT, MDI, Technopolis Group, KPMG, as well as Tuomas Takalo and Otto Toivanen as individual experts.

The report presents a framework for innovation-friendly regulation and describes the current state of innovation-friendly regulation in Finland. In addition to general overview, the topic has been broached through three sectoral examples: platform economy, circular economy and utilization of health data. Related good practices for innovation-friendly regulation have been identified based on Finnish and international case examples.

The report recommends a more precise definition of the general principles for innovation-friendly regulation, the strengthening of inter-ministerial co-operation towards a whole-of-government approach, the specification of guidelines for the evaluation of legislative proposals, and the development of dialogue between public authorities and enterprises. In addition, the report calls for the strengthening of the role of regulation as an instrument of innovation policy, a bolder use of innovation-friendly legislative solutions (e.g. experiments), greater identification and anticipation of regulatory needs, and more effective use of advisory and enforcement practices.

¹ Salminen, V. et al. (2020) Innovaatiomyönteinen sääntely: Nykytila ja hyvät käytännöt. Valtioneuvoston selvitys- ja tutkimustoiminnan julkaisusarja 2020:27.
http://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/162229/VNTEAS_2020_27.pdf

Study objectives and methods

The purpose of the study was to make concrete and informed proposals to support the development of regulation and legislative drafting in Finland towards more innovation-friendly practices.

In particular, the study sought to produce new information related to the following three main questions:

1. *What is the current state of innovation-friendly regulation that enables emerging markets in Finland?*
2. *What good practices of innovation-friendly and enabling regulation are used in other countries, and how could such regulation be developed in Finland?*
3. *How can the Finnish regulatory environment be developed to become as innovation-friendly and enabling as possible?*

As part of the study, an extensive **literature review** was carried out to formulate definitions for and a framework of innovation-friendly regulation. The review looked at academic economic research on the subject, previous studies and reports as well as so-called international grey literature. Additionally, reports and studies produced by the EU and OECD on this subject were analysed.

To map the current state of innovation-friendly regulation, a **document analysis** was produced, in which ministries' and agencies' documents, guidelines and policies related to legislative drafting and evaluation of statutes as well as current legislative projects were examined. The results of the analysis lay the foundation for examining the current state of innovation-friendly regulation in different administrative branches. In addition, government proposals issued in 2018 were analysed. On this basis, an indicative overall picture was formed of the extent to which innovations have been taken into account in government proposals and the way in which the expected impacts on innovation activities were assessed.

The current status of innovation-friendly regulation was mapped by means of an **electronic survey** addressed to ministries, agencies and business organisations. The survey was targeted at experts working with regulation at ministries and agencies and in different sectoral and lobbying organisations. A total of 94 people responded.

To complement the current state analysis, **interviews** were conducted with ministry and agency representatives, in which views, challenges and good practices related to innovation-friendly regulation were mapped. Some of the interviews focused on regulation in the relevant administrative branch in general, while others looked at selected **sector-specific case studies**, concentrating on the more detailed current state and practices of innovation-friendly regulation in three different sectors (circular economy, platform economy and utilization of health data). To ensure that the examination would be sufficiently concrete, more specific examples in each sector were identified for the case studies. The primary method used in the case studies was interviewing key regulatory authorities (public servants drafting legislation in ministries, representatives of agencies responsible for implementation/supervision), business organisations and companies.

In connection with the study a total of 65 experts were interviewed. 26 of the interviewees represented different ministries, 9 government agencies, 9 business organisations and 15 businesses. Additionally, 6 researchers or other experts were interviewed. The project also organised **three stakeholder workshops** with a total of 48 participants.

An **international benchmarking exercise** was completed in an effort to identify good practices and examples of innovation-friendly regulation in frontrunner countries. Based on the document analysis, the United Kingdom, the Netherlands, Denmark and Singapore were selected for closer scrutiny. For each country, the available documents were analysed in detail, and complementary interviews were conducted (7 interviews in total).

The English draft version of the framework for innovation-friendly regulation prepared in connection with the project (see below) was also presented at an international conference organised in Helsinki on 3 December 2019². The presentations given and discussions conducted at the conference supported reflection on the findings and perspectives of the study.

What is innovation-friendly regulation in practice?

Regulation affects innovation activity in many ways and is an increasingly important growth and innovation policy instrument.

Through regulation, a society creates a framework and defines the conditions for innovation activity: what is permitted and what is not, and how should companies respond to these conditions. **Regulation has multiple impacts on innovation activities, and identifying these different routes of influence when drafting and developing regulation is important.**

In general, **regulation can be used to create (or erode) incentives for developing, adopting and deploying innovations.** On one hand, companies incur different costs from compliance with regulation, which may undermine incentives to develop or deploy innovations. On the other hand, in some cases more specific or 'stricter', regulation can speed up the development and deployment of radical innovations by highlighting new technology and market areas, and stabilizing the market, and by lending credibility and legitimacy to new solutions. In practice, regulation can have an indirect impact on innovation activities, for example by means of taxation or by regulating the market access of new operators. At the same time, regulation broadly protects the welfare and rights of different actors in society, simultaneously imposing (often well-justified) restrictions on the development and deployment of innovations (with the data protection legislation as an example).

Rapid technological development and the need to find solutions to societal challenges force decision-makers to find new regulatory approaches. Regulation has thus become an **increasingly important growth and innovation policy instrument**, which also aims to create a national competitive advantage and attract new investments and start-ups. At the same time, rather than only considering it an administrative burden for companies, the idea that regulation can also be used to *actively* create incentives and preconditions for innovation has gathered momentum.

Innovation-friendly regulation is flexible, goal-oriented and predictable.

Regulating innovation activities is very challenging; unpredictable results and a long time-horizon before the impacts materialise are par for the course in innovation activities. The benefits of innovation activities are often also widely distributed, and partly perhaps to parties that did not even exist at the time regulation was adopted (including new companies and users of yet unknown innovations). It may thus be in the interests of established actors to maintain regulation rather than to refine it, which makes promoting reforms difficult. Innovations are often also systemic, in which case the impacts of regulation, too, are complex and difficult to identify. Consequently, while an unambiguous answer to this question does not exist, the following general principles help to structure it. In summary, innovation-friendly regulation is:

- **Flexible, technology neutral and goal-oriented.** Anticipating the creation and development of innovations is difficult or even impossible. This is why innovation-friendly regulation should focus on regulating the desired end results/goals, and leave the means used to achieve them (such as technological solutions) as open as possible. At the same time, innovation-friendly regulation

² The Innovation Principle: Developing an innovation-friendly legislative culture. High-Level Conference 3.12.2019, Helsinki. <https://innovationprinciple2019.fi/>

leaves sufficient room for flexible application and interpretations of regulation as the operating environment changes – by avoiding overly detailed restrictions, or ones that extend far into the future. Fixed-term clauses (“sunset clauses”) and experimental legislation, which produce information on the effectiveness and impacts of regulation, are essential.

- **Predictable and conducive to clarity.** A stable and predictable regulatory environment increases predictability and promotes incentives for developing and deploying innovations. The aim of innovation-friendly regulation should be reducing the likelihood of innovations that are ineligible in the regulatory environment. This can be influenced by increasing the clarity and predictability of the regulatory environment and providing user-oriented information on the impacts and obligations of regulation.
- **Supportive of competition and market dynamics.** Competition has been found to increase innovation activity as a rule, which is why innovation-friendly regulation should aim to enable the market entry of new operators and thus encourage companies to develop more innovative and better products and services.
- **Appropriate and proportional.** Regulation should avoid imposing unreasonable administrative costs on companies, as this can reduce resources available for RDI activities or channel them towards meeting regulatory obligations rather than improving products and services. In some cases, more stringent regulation and/or faster regulatory changes may be more likely to accelerate the creation and spread of innovations than deregulation or gradual changes, which can strengthen established actors’ market position. Dropping unnecessarily complex and outdated regulations is equally important. This does not mean, however, that regulation should compromise on other objectives or principles.
- **Harmonised and scalable.** Regulation related to innovations is typically cross-administrative and extends across national and regional borders. While it is unlikely that a perfect system will ever be achieved, an effort should be made to avoid overlapping regulation, and the regulatory environment should be examined comprehensively and systematically. Other important aspect in terms of developing and spreading innovations is the coherence of regulation across different regions (and states) and ensuring that scaling innovations for other markets is as straightforward as possible.

Innovation-friendly regulatory policy builds shared understanding and dialogue and addresses innovations in legislative drafting

In recent years, many countries have started paying more attention to the types of *practical approaches and solutions* in regulatory policy that could help develop more innovation-friendly regulation – without compromising excessively on other objectives and tasks of regulation (which often have a higher priority). One of the goals of this report was to identify operating methods and practices of innovation-friendly regulation. To structure them, the following framework (Figure 1) was drawn up and used to identify various innovation-friendly regulation practices for the report. The findings are summarised below.

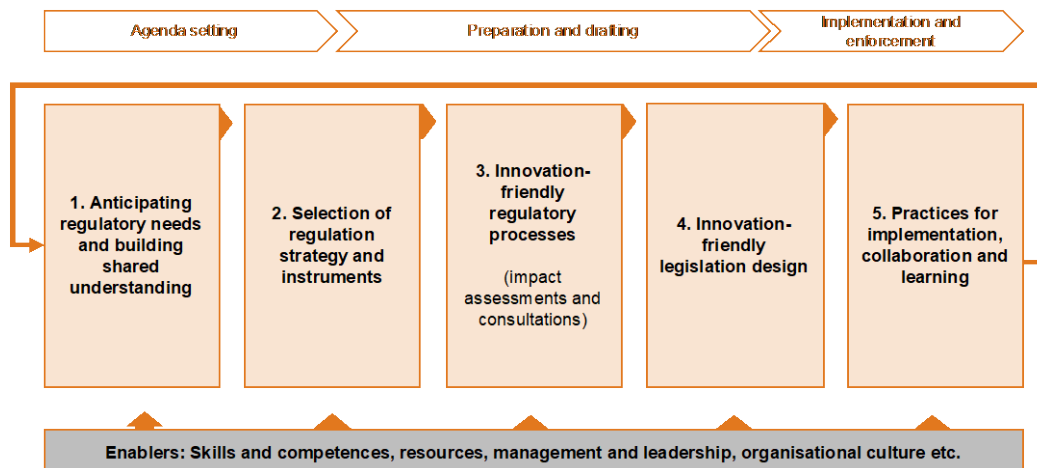


Figure 1. Framework and perspectives of innovation-friendly regulation.

Firstly, the framework identifies the need for **anticipating regulatory needs and defining shared understanding**. This is about different interactive approaches in which, rather than remaining a passive actor, the regulator also actively seeks to create a shared understanding and long-term vision for developing regulation. These practices of 'proactive regulation' include various foresight networks and functions as well as roadmaps for regulating emerging industries or packages of measures prepared in broad-based stakeholder collaboration (including political leadership). Similarly, different 'transition arenas' can help anticipate and create a consensus on regulatory needs between different stakeholders and thus lay a foundation for system change.

Secondly, the key question for innovation-friendly regulation is **selecting the most suitable and effective regulation instrument and strategic option**. Legislation is only one, and not always the most effective or relevant, instrument for achieving policy goals. For example, the desired end result can often be achieved through steering through information or self-regulation in an industry. Examples of alternative strategies include various voluntary commitments that increase regulatory flexibility (such as Green Deals) and industry codes of conduct, which can also complement legislation or even impose stricter obligations if necessary. Rather than being mutually exclusive measures, however, they can be used simultaneously. The essential point is analysing the suitability of the different strategic options systematically in connection with legislative drafting and, if necessary, applying alternative means of regulation to situations where legislation moves too slowly or is an unnecessarily unwieldy instrument.

Thirdly, it is important to strive for **broad and diverse engagement** of actors and stakeholders (especially new and unestablished ones) when drafting legislation. Innovations are frequently developed by new companies, which are more difficult to identify and reach than established businesses. In addition, new companies or companies operating in new sectors are often 'unorganised' and lack strong lobbying organisations. The regulatory competence of new and small actors is often also weaker, and they have less resources for lobbying. This is why diverse engagement and consultation of stakeholders is particularly important in legislative drafting in order to address the innovation perspective. Among other things, this can be supported by using various low-threshold 'consultation platforms' and participatory methods (including open discussion events).

Fourthly, legislative drafting should aim for **assessing the proposal's impacts on innovation activity**. An effort should be made to adopt regulation whose impacts can be later evaluated reliably and easily. This also makes it possible to review unsuccessful regulation quickly and plan new regulation better. It is essential to provide for follow-up and ex post evaluation of impacts already when drafting statutes. In practice, this can be done using such methods as randomised experimental designs (natural experiments). The use of experimental designs is not always possible, however, in which case striving to describe at least the impact

chains through which the impacts (intended or unintended) on innovation activities may be created would be important. The assessment of regulatory impacts on innovation can also be supported with concrete instructions, lists of questions and checklists for legislators.

In the fifth place, **legislative choices and solutions** can significantly influence the way in which the principles of innovation-friendly regulation described above, such as flexibility and predictability, are realised in practice. In practical terms, an effort can be made to promote innovation friendliness through various fixed-term statutes, experimental legislation or outcome-based solutions.

In the sixth place, it is important in the implementation phase to build effective **dialogue and regular 'feedback mechanisms'** that enable companies developing innovations to take into account the requirements of regulation in their innovation activities and provide regulatory authorities with feedback and information on the effectiveness, impacts and development needs of regulation. Different **advisory approaches**, such as regulatory sandboxes, experimental platforms or advisory services, are good examples of innovation-friendly implementation practices. They can reduce the likelihood of 'ineligible innovations' as well as increase knowledge of new technologies and the impacts of regulation on innovation activities (both among businesses and regulators). Various stakeholder dialogue and communication practices can also be used to improve dialogue between the authorities, companies and other stakeholders, and to collect information on the impacts and possible development needs of regulation.

A summary of different innovation-friendly regulation practices is provided in the Table below.

Table 1. Summary of innovation-friendly regulation practices.

Element	What?	How?
Anticipation and building shared understanding	<ul style="list-style-type: none"> • Anticipating regulatory needs related to innovations and technologies • Building shared understanding of opportunities and threats; commitment to sustained development of regulation 	<ul style="list-style-type: none"> • Broad-based stakeholder dialogue and 'transition arenas' • Roadmaps and plans, strategic policies ('White Papers')
Selecting a regulatory strategy and consideration of options	<ul style="list-style-type: none"> • Selecting the most suitable instrument and avoiding unnecessary regulation 	<ul style="list-style-type: none"> • Codes of conduct, voluntary commitments • Knowledge base development and regulation by information
Stakeholder engagement	<ul style="list-style-type: none"> • Broad and diverse consultations of different stakeholders and perspectives 	<ul style="list-style-type: none"> • Open low-threshold consultation platforms, initial consultation rounds • Internal organisation of new sectors
Assessment of impacts on innovation	<ul style="list-style-type: none"> • Assessment of impacts on innovation as part of legislative drafting • Planning of ex-post evaluation and monitoring 	<ul style="list-style-type: none"> • Innovation impact assessment checklists and batteries of questions • Using experimental designs • Monitoring and evaluation frameworks (impact paths) and sets of indicators
Innovation-friendly legislative solutions	<ul style="list-style-type: none"> • Applying the principles of innovation-friendly regulation (including flexibility, technology neutrality) in legislation • Improving the predictability of regulation and reducing uncertainty 	<ul style="list-style-type: none"> • Fixed-term clauses ('sunset clauses'), experimental legislation • General principles and guidelines that support them
Implementation, collaboration and learning practices	<ul style="list-style-type: none"> • Strengthening collaboration between authorities and innovators; ensuring flexible and effective implementation • Effective reconciliation of innovations and the regulatory environment 	<ul style="list-style-type: none"> • Advisory services and regulatory sandboxes • Test labs • Collaboration and monitoring platforms

What is the current state of innovation-friendly regulation in Finland?

While the importance of innovation-friendly regulation has been recognised, it has been taken into account to variable degrees.

The study examined the state of innovation-friendly regulation in Finland based on interviews, an electronic survey and a document analysis. The findings indicate that regulation relevant to innovation can be identified in all administrative branches. In other words, **innovation-friendly regulation is a relevant cross-cutting perspective in all branches of administration**. Consequently, the significance of this subject has been widely recognised in various ministries, which also display **a willingness to develop more innovation-friendly regulatory processes**.

However, the study also found **major variations** in the degree to which the innovation perspective has been taken into account in different administrative branches. Good examples of regulation in which efforts have been made by different ministries to apply the principles of innovation-friendly regulation – such as technology neutrality – can be found in Finland (Act on Transport Services Act, Act on the Secondary Use of Health and Social Data). However, these are individual examples rather than extensively applied principles.

Clearer principles and their integration into legislative drafting are needed to mainstream innovation-friendly regulation

The lack of **declared principles or definitions shared by administrative sectors** regarding innovation-friendly regulation is a significant bottleneck in promoting such regulation in Finland. As a result, the ideas and practices of innovation friendliness vary not only between but also within administrative branches. Similarly, different views of what innovation friendliness is or should be can be found within individual ministries. All in all, the subject clearly is still new, and there is a need for clearer structuring and principles helping to mainstream it. The present report aims to contribute to tackling this challenge.

The challenges to developing innovation-friendly regulation are also largely relevant to good regulation in general. One of them is **political steering and the commitment of political leadership** to long-term and outcome-based regulatory development. Political steering focusing on details and methods may undermine the possibilities of creating innovation-friendly regulation. At the same time, however, it is important that political decision-makers are involved in working for a shared understanding of and commitment to longer-term policies on regulating new technologies and growth sectors which span several government terms.

Another general challenge that emerged in the report was **time and personnel resources** for legislative drafting. Innovation-friendly regulation is a new subject, and new operating methods, guidelines and changes in the operating culture would be needed to address it. This, on the other hand, would require not only resources and investments in the preparation of interpretation guidelines, development of ministries' and supervisory authorities' competence and practices, and communication to stakeholders but also **clear leadership and mandate** coming from the ministries' top management (incl. political management). At the same time, however, an effort should be made to integrate the **innovation perspective into the more extensive development of legislative drafting**, avoiding attempts to develop it as a separate entity.

Open stakeholder engagement is promoted but regulatory competence remains a challenge

The study found that legislators are striving to promote openness and diversity in stakeholder engagement. Good practices and operating methods for this can be identified in many ministries and agencies. Active efforts are being made to identify new actors and 'add them to the lists', and open low-threshold consultation events have been organised as part of drafting statutes. What emerged as a challenge, on the other hand, is that the consultations often only take place towards the end of the drafting process.

Challenges related to engagement additionally arise from the limited regulatory competence and resources of new actors, which is why it may be very difficult for them to recognise opportunities for exerting influence or to comment on pending legislative projects. **In addition to the openness of engagement, building up new actors' capabilities for participating in legislative drafting is important.**

Impacts on innovation activities rarely assessed – concrete tools are needed

The study indicates that (ex-ante) **assessment of impacts on innovation activities has been quite occasional** in connection with legislative drafting. While individual good examples can be identified, an analysis of government proposals issued in 2018 confirms the observations made in the interviews that taking the innovation perspective into account in the ex-ante assessments remains case-specific and unstructured.

To support the assessment of impacts on innovation, there is **a need for more clearly defined framework, structured and concrete tools** (such as 'checklists'), which would make it easier to account for the innovation perspective in legislative drafting. The challenges also include **identifying legislative projects that are relevant from the perspective of innovation** (especially in other ministries). The study thus brought up a need to create practices for effectively identifying relevant regulations and legislative projects.

However, we should note that even today, many different 'impact categories' must be taken into account in drafting, and pressures to assess new themes and perspectives also come from other directions. In addition, it should be noted that the time and personnel resources allocated to impact assessment are probably means that less resources can be allocated to other stages of legislative drafting. For these reasons, an ability to effectively prioritise and identify the projects and types of regulation essential from the innovation perspective and to focus resources on assessing them is essential. The 'checklist' prepared as part of this study (see the recommendations) can help identify the most relevant projects.

Lessons from thematic case examples

Regulation plays an important role in the development of emerging sectors

The **high (and even central) significance of regulation in the development and renewal** of industries is emphasised in all industry-specific examples examined for this report (platform economy (MaaS and Fintech), circular economy and health data utilisation). For example, the obligations to open interfaces laid down in the Act on Transport Services will probably have an essential impact on the development of the MaaS ecosystem. Similarly, the obligation imposed under the second EU Payment Services Directive (PSD2) on banks to open their data and interfaces has already played a significant role in pointing the way for innovation activities related to fintech services both in Finland and internationally. The same can be said about the role the Act on the Secondary Use of Health and Social Data will play in the development of business based on health data. For the part of the circular economy, the case studies brought up examples of how such statutes as the new Waste Act, the EU's Circular Economy Package and the so-called End of Waste Regulations as well as jointly defined objectives are reflected in the sector's innovation activities.

Examples also show that regulation of emerging sectors is associated with a wide variety of sector-specific characteristics and issues. Some of the most common challenges, issues and good practices related to regulating emerging sectors can be identified based on the examples discussed in the report. In the future, however, there will be a clear **need for more comprehensive sector-specific mapping of regulatory needs**.

Spotlight on the international dimension

In all the examples studied, **the importance of the international regulatory framework (in particular the EU's)** is spotlighted – although the sectors examined also differ somewhat as to the room for manoeuvre left for national regulation.

Fintech is a good example of a sector in which most regulation is largely international and there is very little room for manoeuvre at the national level. Fintech services aim for a scalable international market as a starting point and, consequently, international harmonisation of the regulation on this sector is important for companies' international growth. It will be interesting to see if the international harmonisation of the fintech regulation points the direction to which other sectors (currently less digital and scalable) are gradually heading.

As far as MaaS is concerned, there is also a considerable volume of international regulation laid down by the EU, whereas Finland has also opted for national 'forward-looking' solutions that go further than EU legislation in the Act on Transport Services. In the context of secondary use of health data, data protection legislation is similarly very international, but Finland has striven to lead the way by adopting more advanced national regulation.

While circular economy is the area with the most national (and even regional) regulatory differences, the EU's Circular Economy Package and EU level target setting also essentially direct the development of innovation activities in this sector.

In practice, the importance of the international dimension stresses the **essential need to monitor – and seek to influence – International development of regulation** in emerging sectors.

Legislation coexisting with other policy tools – emphasis is needed on the implementation phase and dialogue

The examples studied also illustrate how, despite its significance, legislation should only be seen as part of a larger palette of regulatory instruments in the development of emerging sectors. The significance of different **alternative and softer methods coexisting with or supporting legislation can be easily identified in all examples.**

The interviewees emphasised the view that legislation (including EU legislation) is in itself often enabling and innovation friendly, and that the **challenges are more likely to lie in questions related to its implementation and interpretation.** In the platform economy, for example, developing industry codes of conduct and implementing technical interfaces are emphasised (MaaS, Fintech). Fintech also is an example that illustrates the importance of operating licence processes and advisory services related to regulation, especially for new and small companies. The importance of shared **interpretations of legislation and concrete guidelines** was emphasised in all examples, especially regarding the utilisation of health data. The material efficiency commitments of the food industry are a good example of what the role of **voluntary commitments** could be in the development of new growth sectors.

Especially for new and small actors, **recognising and understanding regulatory obligations** is challenging, and they often do not have sufficient know-how or resources to familiarise themselves with the regulatory environment. The worst-case scenario is that this results in wasting the resources allocated to innovation activities and major difficulties for companies when the product or service they have developed does not meet the regulatory criteria. In many cases, a better solution would be to clarify regulation, for example by means of communication, and to build up regulatory competence rather than imposing less stringent requirements or amending legislation. The latter approach could lead to reduced competition and lower requirements for products and services.

All in all, the need to **develop 'advisory' regulation as well as implementation and dialogue practices** emerges strongly in the report. This emphasises the need to develop different practices on the interface between the authorities and companies, advisory services, and regulation by information. The international comparison showed that 'business interface' practices of this type are clearly less developed in Finland than in the frontrunner countries. Different types of 'regulatory sandboxes' have been seen as one solution to this (in some industries), but they require a great deal of resources, and the experiences gained of them vary.

Building shared understanding in a key role

In all the examples that were studied, **building shared understanding and defining common goals** emerged as a key factor. This requires a comprehensive perception and understanding of the phenomena to be regulated, extensive, cross-administrative and cross-sectoral dialogue, and long-term strategy and development work.

The report identified good examples of practices that have succeeded in creating a shared understanding and vision between different stakeholders on the regulatory needs of new growth sectors. The Club for New Transport Policy is a good example of a 'transition arena' which laid the foundation for reforming transport sector regulation. Other examples include the Health Sector Growth Strategy for Research and Innovation Activities, the National Growth Programme for the Transport Sector and the Finnish Roadmap to a Circular Economy. However, these are individual examples rather than a systematic part of regulatory development, and practices related to this aspect came up as an important development area from the perspective of regulating emerging sectors. Neither does Finland have a national 'foresight forum for the regulation of new technologies/growth sectors' similar to those established in the benchmarking countries in recent years.

Lessons from country cases

The following summarises the main lessons from the international benchmarking, focusing on four countries identified as frontrunners for innovation-friendly regulation (Denmark, Netherlands, Singapore, United Kingdom). The benchmarking country cases have been conducted from the Finnish perspective, focusing on those practices, which were seen as most relevant for Finnish context. Full English case descriptions are available in the main report.

Innovation-friendly regulation is a new and emerging phenomenon – several lessons from frontrunner countries can be learned

An international benchmarking exercise completed for the report showed that **innovation-friendly regulation has emerged very strongly in many countries in recent years as one of the priorities of growth and innovation policy**. The backdrop to this are pressures created by technological development to reform the regulatory environment on the one hand and, on the other, the need to find solutions to societal challenges. In addition to reducing the administrative burden of regulation, the operating methods of regulation and the role of regulation in facilitating the emergence of new markets are also increasingly talked about.

The benchmarking exercise identified the UK, Denmark, Singapore and the Netherlands as frontrunners. The comparison showed that in all of these countries, efforts have been made to systematically develop innovation-friendly regulation – albeit from slightly different perspectives. **Good practices can thus be identified in the benchmarking countries, which would probably help to develop innovation-friendly regulation in Finland** and respond to bottlenecks identified in the report. It should be noted, however, that this phenomenon is still quite new, and the practices related to it are only taking shape. This is why little or no reliable information on the benefits and effectiveness of the practices is available.

Table 2 describes the current status of innovation-friendly regulatory policy and practices in different countries compared to Finland.

Table 2. Summary of the current state and good practices of innovation-friendly regulatory policy in the benchmarking countries. Legend: ++ = Clearly ahead of Finland, + = Somewhat ahead of Finland, 0 = At the same level as Finland, - = Behind Finland.

Area	DK	NL	SG	UK	Identified best practices
Anticipation of regulatory needs and shaping of shared understanding	+	+/0	+	++	Strategic approach of proactive regulation in the United Kingdom (Industrial strategy + Regulation for the Fourth Industrial Regulation White Paper + Regulatory Horizons Council)
Strategic alternatives to regulation	+/0	++	+	+/0	Systematic reflection on strategic alternatives to regulation and guidelines in the Netherlands
Stakeholder engagement in the development of legislative drafting	+	+/0	++	+	Singapore Pro-Enterprise Panel as an interface for dialogue between authorities and companies
Assessment of impacts on innovation	++	+/0	-	+	Principles of innovation-friendly regulation in Denmark and their consideration in legislative drafting
Legislative solutions	+/0	++	+/?	+/?	Experimental legislation and various fixed-term clauses in the Netherlands
Implementation, monitoring and learning practices	+	+	++	++	In Singapore, Pro-Enterprise Panel & New Idea Scheme, sandboxes; In the UK, Regulators' Pioneer Fund and projects funded through it

Finland lags behind especially in the practices of proactive and advisory regulation

Finland does reasonably well in the benchmarking exercise, especially in the area of developing legislation that enables and encourages innovation. For example, the Act on Transport Services and the Act on the Secondary Use of Health and Social Data are referred to internationally as good examples.

However, Finland lacks general **guidelines and definitions for innovation-friendly regulatory policy** at the strategic level, which have been produced in such countries as the United Kingdom (cf. *Regulation for the Fourth Industrial Revolution White Paper*) and Denmark (cf. *(principles of agile and future-proof regulation)*). There is also no national forum in Finland for systematic discussions on the impacts of technological change and regulation needs (cf. *Komet* in Sweden, the *Disruption Council* in Denmark and the *Horizon Council* in the UK). Similarly, surveys on regulatory needs in individual industries have not been carried out as systematically as in Singapore (*Industry Transformation Maps*) or Canada, for example.

Regarding **assessment of impacts on innovation**, practices in different countries are evolving, and it is difficult to form an overall picture of them. The most advanced country in this respect appears to be Denmark, however, which has defined the principles of innovation-friendly regulation discussed above and expects them to be followed when drafting statutes. In guidelines for legislative drafting issued in the Netherlands, on the other hand, special attention is paid to systematic consideration of strategic alternatives to regulation.

The greatest difference between Finland and the benchmarking countries examined would seem to lie in the **implementation stage and advisory regulation practices** aiming to help companies adapt to the regulatory environment and to develop dialogue between authorities and companies. The *Room-in-rules* programme in the Netherlands, the *Pro-Enterprise Panel* and the *New Idea Scheme* operating model in Singapore as well as the projects financed through the *Regulators' Pioneer Fund* in the UK are good examples of this. Especially in the United Kingdom and Singapore, considerable efforts have also been made to develop regulatory sandboxes.

Policy recommendations

Recommendation 1: Defining the principles and conditions of innovation-friendly regulation

In order to support legislative drafting, the **general principles and conditions of innovation-friendly regulation** should be defined more clearly, and a clearer definition should be formulated for what innovation-friendly regulation means and what its goals are (or are not). These guidelines should address the policies and plans for developing innovation-friendly regulation in the EU and key benchmarking countries. The definitions and frames of reference presented in this report could be used to support the work to define these principles and marginal conditions.

The definitions should also be **expressed in concrete terms in the internal guidelines and objectives of different administrative branches**, and **adequate resources, instructions and training should be provided**. The innovation perspective should also be integrated more strongly as one perspective into the efforts of general projects and working groups aiming to develop legislative drafting.

Recommendation 2: Strengthening cross-administrative collaboration and competence

In order to mainstream innovation-friendly regulation, there is also a need to **strengthen cross-administrative collaboration between ministries**, especially in the context of identifying regulatory projects that are relevant from the perspective of impacts on innovation as well as sharing competence and practices related to innovation-friendly regulation. A cross-administrative **competence network/operating model for assessing impacts on innovation** was identified as one solution to this problem.

While the network would primarily be aimed for public officials drafting legislation in the ministries and the authorities responsible for follow-up and monitoring, it could also involve other experts and stakeholders. Its task would be helping to **identify legislative projects that are relevant to innovations** (including those that do not necessarily aim for impacts on innovation) and sharing good practices and expertise related to assessing these impacts. It should be a lightweight 'grassroots' model rather than a top-level body, and it should be linked to existing processes and networks.

Recommendation 3: Developing the assessment of regulatory impacts on innovation

To support efforts to develop the assessment of impacts on innovation, **updated guidelines for assessing legislative proposals** (as part of the guidelines for assessing impacts on businesses) are needed, describing in greater detail how impacts on innovation can be assessed and what issues the assessment should pay attention to. The findings and frames of reference of this report can support guideline updates.

In addition to and alongside official guidelines, there is also a need for a practical and easily updated **guide/toolkit for assessing impacts on innovation**, which would contain examples and guidelines for assessing the impacts of legislative proposals on innovation activities or for promoting the consideration of alternatives to and methods of regulation by also translating issues related to the regulatory strategy into concrete terms.

In addition to the ex-ante assessment of legislative proposals, there is also a need to develop **practices for the monitoring and ex post evaluation** of impacts on innovation as part of the ongoing broader development work. Taking the ex-post evaluation and monitoring into account better already in the legislative drafting phase would be important. The best option for this is to make use of different experimental designs, although this can be difficult in many cases. Similarly, while producing quantitative estimates of impacts on

innovation in general is probably very difficult, merely describing and writing out the **anticipated impact paths** would support later monitoring and ex-post evaluation.

WHEN SHOULD THE IMPACTS OF A LEGISLATIVE PROPOSAL ON INNOVATION BE ASSESSED?

In order to identify legislative projects with relevance to innovation activities and to support their drafting, a pragmatic list of questions should be drawn up, which will enable the officials drafting legislative proposals to identify projects or regulations which may have an impact on innovation and to assess the nature and significance of these impacts.

In principle, the legislative proposal to be drafted has direct impacts on innovation activities and market development if:

1. The *aim* of the proposal is specifically to promote the *emergence of new markets*, the *renewal of market structures* or the development of services.
2. The proposal is essentially linked to the *application of technologies* which are in themselves undergoing a transformation, develop constantly (digitalisation) or are expected to develop rapidly (the platform economy).
3. The proposal has a *cross-cutting impact on the functioning of the market* and competition (opening up the market and market access for new operators).
4. The proposal has a guiding effect on the *key properties of products and services* (their target levels, criteria, technical properties, raw materials).
5. The proposal affects companies' *incentives to invest* in the development of new products, services and solutions (incentives and resources for RDI, copyrights, IPRs).
6. The proposal affects incentives and opportunities for *experimenting with, piloting* and/or bringing to the market new types of solutions (public procurement, permit processes)
7. The proposal affects incentives and opportunities for *collaboration* between different actors (information sharing and utilisation, interfaces).

A legislative proposal may also have indirect impacts on innovation if:

- It is part of a broader set of regulations in which the implementation of several or certain statutes has the effects described above
- It significantly increases the general administrative burden of companies and thus directs resources away from RDI activities
- It has general impacts on competition between companies and the functioning of the market (competition law, price regulation) and/or incentives for companies' growth and internationalisation
- It affects companies' possibilities to recruit or otherwise utilise competence that is central to RDI activities and/or the outcomes of other RDI activities.

Recommendation 4: Developing practices for early-stage engagement

The report found that legislators already strive to ensure diversity and openness in stakeholder engagement. Active efforts are being made to identify new actors and engage them in drafting legislation, and good examples of using different participatory methods can be identified (working groups, low-threshold stakeholder events). However, the challenge is that the consultation often only takes place towards the conclusion of the drafting process. Especially small and new actors additionally have limited resources and knowledge of the regulatory environment, which is seen as a challenge.

In the future, efforts should be made to increase **new actors' opportunities for participating in the discussion already as the objectives are being defined** and to **strengthen dialogue, mutual learning and feedback channels between regulatory authorities and companies** (cf. recommendations for developing new growth sectors).

Recommendation 5: Making bolder use of innovative forms of regulation and legislative solutions

The report supported the view that relatively little use has been made in Finland of different strategies based on alternatives to regulation (self-regulation, voluntary commitments) and innovation-friendly legislative solutions (regulations valid for a fixed term, experimental legislation). In this area, unexploited potential could probably be found.

More evidence-based information on as well as practical examples and experiences of this subject are needed. Identifying some legislative projects that could be used as pilots and analysing and sharing the lessons learned and experiences gained from them could be one way of moving forward.

HOW CAN REGULATORY PROJECTS BE MADE MORE INNOVATION-FRIENDLY?

1. Do not compromise on the fundamental objective

- The purpose of regulation is to limit and regulate market functioning, for example to promote safety or fairness in society.
- Eligible innovations comply with the marginal conditions set by regulation and offer better solutions than previous options. Rather than lowering the requirements for innovations, the purpose of innovation-friendly regulation is to motivate and encourage competition for developing better solutions.

2. Ensure flexibility and technology neutrality

- Does the proposal provide for sufficient flexibility in meeting the objectives of regulation – possibly through technological solutions and approaches that are completely new (and yet unknown)?
- Does the proposal provide sufficient flexibility for the implementation and interpretation of legislation as the operating environment changes?
- Does the proposal allow for flexibility in updating the target levels, criteria or other definitions (without legislative reform) to reflect the latest and best proven solutions?

3. Increase predictability and clarity

- Does the proposal enable the use of clauses for a fixed term rather than permanent legislation, or the setting of deadlines for evaluating and reviewing the effectiveness of the regulation?
- Does the proposal increase the predictability and clarity of the regulatory environment, for example in relation to how new technologies and innovations are classified, defined or interpreted in legislation and its implementation?
- Does the proposal allow for the different time frames of innovation activities in various fields?
- Can the proposal clarify and simplify the existing legal environment and eliminate possible overlaps?

4. Promote competition and market dynamics

- Does the proposal also address sufficiently and diversely the viewpoints of non-established actors (large/established and small/new companies)?
- Does the proposal also enable entirely new innovations and the market entry of new operators (implementation schedule, requirement levels)?

5. Reduce the administrative burden

- Is it possible to replace some of the binding legislation by self-regulation or other policy instruments?
- Can factors that deprive RDI of resources and/or channel resources to fulfilling obligations rather than improving the quality of products and services be removed from the proposal?

- Does the proposal take into account the costs and requirements of regulation, especially from the perspective of new/small actors?

6. Pay attention to the international dimension and scalability

- Does the proposal guide actors to develop products and services that will be competitive in the international market (taking into account international standards and criteria)?
- Is the proposal in line with international regulations, without hampering the scaling of innovations at the international level (in particular, in the EU single market?)

7. Ensure effective implementation and monitoring already in the drafting stage

- Does the proposal address other measures essential for achieving its objectives (information needs, codes of conduct)?
- Does the proposal account for monitoring and assessing impacts on innovation? Can experimental designs be devised to support the assessment?
- Can experiments or other practices that promote learning be used when implementing the proposal?
- Does implementation require new types of expertise or cooperation with other authorities, companies or actors?

Recommendation 6: Making strategic choices about using regulation as an innovation policy instrument

To promote innovation-friendly regulation, a clear policy should be drawn up describing Finland's objectives, priorities and responsibilities for promoting innovation-friendly regulation (cf. the *Regulation for the Fourth Industrial Revolution White Paper* in the UK). **The objective should be clarifying and defining how regulation can be used more efficiently as part of the palette of growth and innovation policy instruments.** At best, developing innovation-friendly regulation practices can be relatively cost-effective compared to other innovation policy instruments.

Recommendation 7: Identifying and anticipating regulatory needs in the development of emerging sectors

In addition to general policies and principles, **more detailed sectoral or thematic plans ('regulatory roadmaps')** are needed to identify the opportunities, risks and needs for regulatory reform important in terms of growth, renewal and societal development. An analysis of this type should be included in all strategies and action plans aimed at developing emerging sectors (as good examples can be mentioned the National Growth Programme for Transport Sector and the Health Sector Growth Strategy for Research and Innovation Activities). An ability to define longer-term objectives and development needs for regulation and ensuring political decision-makers' engagement in and commitment to the policies would be vital.

Finland should also strive to **exert strong influence at the international level and ensure** that the regulatory needs identified as important for growth sectors are taken into account in EU level regulation.

In addition, the need to establish a **foresight forum** focusing on technological changes and regulatory needs should be examined (cf. *Komet* in Sweden or the *Disruption Council* in Denmark).

Recommendation 8: Using advisory regulation and implementation practices more efficiently

In Finland, there is a particular need to **strengthen the practices of so-called advisory regulation**, which help companies to develop products and services that meet the regulatory obligations. At the same time, the legislators and authorities can learn valuable lessons about what practical impacts regulation has on

companies' innovation activities, how innovations and business models work, or what broader societal impacts new technological solutions can have.

In practical terms this means such measures as clarifying regulation and its requirements **by means of communication and increasing the provision of advisory services on regulation** (cf. the Finnish Financial Supervisory Authority's Innovation HelpDesk). In the implementation phase, there is therefore a need for **guidelines of a particularly concrete nature setting out how the legislation will be interpreted**.

Different types of **test labs and 'regulatory sandboxes'** are other examples of practices that can be used to promote innovation-friendly regulation. Additional resources and targeted investments as well as sector-specific tailoring are needed to develop these practices, and the needs associated with them should be examined in more detail in each case (cf. *Regulators' Pioneer Fund* in the UK). Compared to many other policy measures, however, this is likely to be a reasonably cost-effective instrument.

Probably the greatest challenges from the viewpoint of innovation-friendly regulation are associated with interpreting legislation, rather than restrictions imposed by legislation. An important part of developing innovation-friendly regulation is striving to **develop the interpretation of legislation in a direction that enables innovation activity**, however without compromising on the other key principles of regulation. It is likely that this will also necessitate a change in the administration's operating culture, in which (supervisory) authorities will, rather than merely gatekeepers and supervisors, increasingly also be partners and proactive developers of innovation-friendly regulation.

Concrete next steps could include the ministries' **joint project or programme for developing innovation-friendly regulation practices** tasked to investigate, develop and/or fund innovation-friendly regulation practices suitable for Finland, such as sandboxes, advisory services and test labs, and to examine the resource and research needs associated with them. At the same time, sufficient expertise, resources and a mandate should be ensured for developing these practices.