

# Innovation Impact Assessment

Guide for Law Drafting



Ministry of Economic Affairs  
and Employment of Finland

**Ministry of Economic Affairs and Employment of Finland**

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# **Innovation Impact Assessment**

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# 1 Background and purpose of the guide

Major societal changes and rapid technological development have increased the significance of regulation in enabling innovation activities and the introduction of new technologies and business models. Innovations and new technologies may also involve risks and ethical issues that regulation needs to address. A regulatory environment favourable to innovations has become an important competitive factor internationally, and it is also aimed at attracting new investments and companies. The significance of regulation in creating preconditions and incentives for innovation-friendly activities is also being increasingly recognised in Finland.<sup>1 2</sup>

Improvement of innovation impact assessment is included in the measures of the National Roadmap for Research, Development and Innovation (RDI Roadmap) adopted in spring 2020. The European Union also has a strong ambition to develop a more innovation-friendly regulatory environment. In May 2020, the European Commission set up the *Fit for Future Platform*, one of the tasks of which is to help the Commission ensure that EU policies are resilient, future-proof, innovation-friendly and recognise the potential of digitalisation.<sup>3</sup> In November 2020, the EU Council adopted conclusions on regulatory sandboxes and experimentation clauses as tools for better regulation.<sup>4</sup> The conclusions are strongly linked to the *Innovation Principle*, which entails taking into account the impact on research and innovation in the process of developing new regulation and reviewing existing regulation. In autumn 2021, the OECD Council adopted a recommendation for agile regulatory governance to harness innovation. The purpose of the recommendation is to help governments develop and implement new regulatory approaches and increase cooperation to promote innovation.<sup>5</sup>

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- 1 Salminen, V. et al. (2020) Innovation-friendly regulation: Current state and good practices. Publications of the Government's analysis, assessment and research activities 2020:27. See [https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/162229/VNTEAS\\_2020\\_27.pdf?sequence=1&isAllowed=y](https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/162229/VNTEAS_2020_27.pdf?sequence=1&isAllowed=y)
  - 2 See also the website of the Ministry of Economic Affairs and Employment: <https://tem.fi/en/innovation-friendly-regulation>
  - 3 For more information on the Fit for Future Platform, see: [https://ec.europa.eu/info/law/law-making-process/evaluating-and-improving-existing-laws/refit-making-eu-law-simpler-less-costly-and-future-proof/fit-future-platform-f4f\\_en](https://ec.europa.eu/info/law/law-making-process/evaluating-and-improving-existing-laws/refit-making-eu-law-simpler-less-costly-and-future-proof/fit-future-platform-f4f_en)
  - 4 For more details, see Council Conclusions on Regulatory sandboxes and experimentation clauses as tools for an innovation-friendly, future-proof and resilient regulatory framework that masters disruptive challenges in the digital age. Available at: <https://data.consilium.europa.eu/doc/document/ST-13026-2020-INIT/en/pdf>
  - 5 Recommendation of the Council for Agile Regulatory Governance to Harness Innovation, <https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0464>

According to the Regulatory Impact Assessment Guidelines, the impacts of regulation on the creation and diffusion of innovations in the market must be taken into account in legislative drafting. It is important to identify if the regulation either enables, facilitates or prevents the emergence of new innovations or the entry of new players into the market.

This guide provides law-drafters with information on innovation impact assessment and the practical implementation of this during the drafting phase. The guide supplements the Regulatory Impact Assessment Guidelines <sup>6</sup> for Legislative Drafting and the more detailed guidance for assessment of regulatory impacts on business issued by the Ministry of Economic Affairs and Employment<sup>7</sup>.

The lessons and experiences of a pilot of the Ministry of Economic Affairs and Employment on the development of the assessment of regulatory impact on innovation have been utilised in the preparation of the guide. The pilot was implemented in 2021. Gaia Consulting Ltd, WitMill Oy and Forefront Ltd planned and carried out the pilot's impact assessments, tool development and this guide on behalf of the Ministry of Economic Affairs and Employment. <sup>8</sup>

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6 <https://oikeusministerio.fi/hanke?tunnus=OM076:00/2020>

7 <https://tem.fi/ohjeet-ja-menetelmat-yritysvaikutusten-arviointiin>

8 Forefront Ltd carried out the evaluation of the Research Information Hub and developed tools. Gaia Consulting Ltd and WitMill Oy conducted the evaluation of the testing of the built environment information system and automated driving systems and helped prepare the guide.



# 2 Content of the guide

Chapter 3 of the guide provides a general background for assessing the impact of regulation on innovation and various tools. Chapter 4 presents a quick test of regulatory impacts on innovation in the form of a quick checklist for innovation and business impacts, which was developed and tested in the pilot. On the basis of the results of the quick test, a decision can be made on the implementation and targeting of a more detailed assessment. Chapter 5 provides a more detailed description of the implementation of an innovation impact assessment in stages. Key lessons learned from the assessment of the innovation impact of the three legislative amendments included in the pilot are presented in Chapter 6.

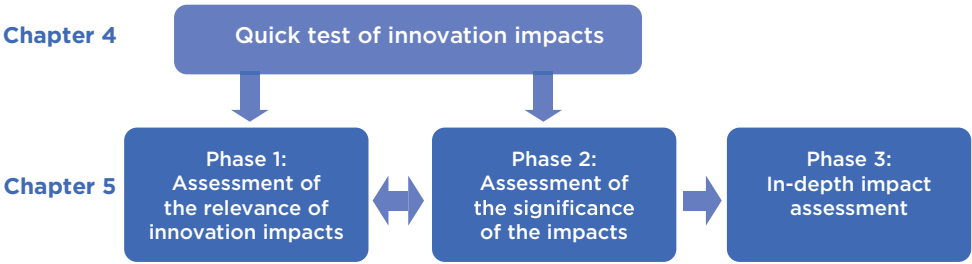


Figure 1. Quick test of innovation impacts and the phases of innovation impact assessment in the guide

# 3 Perspectives and tools for the assessment of regulatory impacts on innovation

Regulation affects innovation activities through two mechanisms. On the one hand, it affects the incentives for innovation activity and its financing, and on the other hand, it affects the utilisation of the results of innovation activity. Sometimes these objectives may also conflict with each other. Therefore, in drafting and evaluating regulation, attention should be paid to how the regulatory measures affect incentives for innovation and the development and adoption of new innovations.<sup>9</sup>

The results of innovation activities are often difficult to predict and the time horizon is long. The benefits are usually shared by a wide range of stakeholders, and in some cases the beneficiaries do not yet exist at the time of regulation. New innovations are also often systemic, which means that the effects of regulation are also complex and difficult to identify.<sup>10</sup>

Moreover, the innovation impacts are not isolated from other impacts. For example, innovation activities enable the adoption of more efficient and cleaner technologies, which contributes to the achievement of environmental objectives in many ways. On the other hand, while innovations are important for economic and social renewal, not all innovation activities promote wellbeing. It is important to find an appropriate balance between different policy objectives and the promotion of innovation.

There is no unambiguous answer to the question of what kind of regulation is innovation-friendly in practice, but the principles of innovation-friendly regulation help to structure the question.

Innovation-friendly regulation is<sup>11</sup>

- flexible, technology-neutral and goal-oriented, allowing for different applications;
- predictable and transparent;
- pro-competitive;
- appropriate and minimising of administration; and
- harmonised and scalable for other markets.

It is important to take into account the innovation perspective in the different stages

9 Salminen, V. et al. (2020)

10 Salminen, V. et al. (2020)

11 Salminen, V. et al. (2020)

of the legislative drafting process, in particular in the preliminary preparation and regulatory drafting phases, when outlining the regulatory solution to the problem. Innovation-friendly regulation practices are defined as<sup>12</sup>

1. anticipating regulatory needs and building common understanding,
2. choice of regulatory strategy and instruments,
3. mainstreaming the innovation dimension in legal drafting (impact assessments and stakeholder involvement),
4. innovation-friendly regulatory solutions, and
5. practices of implementation, cooperation and learning.

*This guide focuses on the innovation impact assessment, especially in the preliminary preparation and regulatory drafting phases, at which point clarifications and changes are still possible.*

At this stage, the assessment has two main objectives.

- a) Examine whether legislative proposal has any impact on innovation and business, which should be taken into account and assessed in more detail.
- b) If legislative proposal is assessed as having an impact on innovation and business, ensure that the identified innovation and business perspectives are sufficiently taken into account in the drafting.

There are many different methods for assessing innovation and business impact. These include econometric and statistical methods, experimental designs, monitoring and assessment frameworks (impact pathways) and indicators.<sup>13</sup> If the law-drafter decides to carry out a more detailed impact assessment, the subject matter, available material, resources and timeframe will affect the selection and use of the methods. This guide focuses on light and easy-to-use tools suitable for preliminary impact assessment during the preliminary preparation phase of legal drafting.

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12 Salminen, V. et al. (2020)

13 See Forefront Ltd's framework for research and innovation impact assessment, which was piloted in the Research Information Hub project. Salminen, V. & Härmälä, V. (2021) Innovaatiovaikutusten arvioinnin pilotti – tutkimustietovaranto (“Innovation Impact Assessment Pilot – Research Information Hub”). Final report. March 2021. <https://tem.fi/innovaatiomyonteinen-saantely>

# 4 Quick test for potential impacts on innovation

The **quick test** is a list of questions that serves as a self-assessment tool for law-drafters. The aim is to help identify legislative proposals that may have an impact on research and innovation and to make an initial assessment of the magnitude of the impact.

The regulatory impact assessment pilot tested and developed a list of questions for the assessment of the impact of legislative proposals on innovation. The quick test is based on a checklist to assess impacts on research and innovation from the European Commission's Better Regulation toolbox (#22).<sup>14,15</sup>

The guide uses the term “quick test” for this tool because it acts as a quick way to tentatively determine the potential impacts on innovation. On the basis of the results of the quick test, the law-drafter can assess the need for an in-depth impact assessment.

The quick test contains a list of 16 questions, which are shown in Table 1. The questions cover a wide range of innovation and business impacts. The perspectives to be assessed relate to the functioning of the market, the application of emerging technologies, development incentives, piloting and market introduction opportunities, competition, product characteristics, business growth, expansion, RDI cooperation and administrative burden.

Although the list of questions is broad, it may not be comprehensive, as there may be other relevant innovation aspects to the legislation being drafted. In this case, it is worth adding these new perspectives to the quick test.

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14 European Commission (2021) Better Regulation Toolbox. Better Regulation Toolbox #22 ([https://ec.europa.eu/info/sites/default/files/br\\_toolbox-nov\\_2021\\_en\\_0.pdf](https://ec.europa.eu/info/sites/default/files/br_toolbox-nov_2021_en_0.pdf)) (Research and innovation) Another essential tool is Tool #69 Emerging methods and policy instruments, which discusses e.g. regulatory sandboxes. See also “Innovaatiomyönteisen sääntelyn käytännöt kasvualoilla – Ohjeita sääntelykokeilujen suunnitteluun ja toteutukseen” (Innovation-friendly regulation practices in growth sectors – Guidelines for designing and implementing regulatory experiments). MEAE guidelines and other publications 2021:4 FI, <https://julkaisut.valtioneuvosto.fi/handle/10024/163768>

15 Salminen, V. & Härmälä, V. (2021)

## The quick test can be used in several ways

1. The quick test can be used as an internal tool for law-drafters to ensure a common understanding of the intended effects, of what the legislation regulates directly and of what effects, for example, are intended to be indirectly enabled.
2. The quick test questions can be used as a basis for discussions between law-drafters and stakeholders. The test provides a comprehensive picture of the different impacts and enables more detailed discussion of the impacts of the options in different target groups.
3. The quick test is also suitable for use as a checklist of relevant innovation impacts during law-drafting.

However, the quick test works best in the preliminary preparation and regulatory drafting stages, after the objectives of the proposal have been defined but concrete content is still under preparation.

## The quick test is divided into two parts

- **The first part** assesses whether regulation has the effect referred to in the question in the first place, i.e. whether the question is relevant to the legislative proposal under preparation.
- The relevance is assessed on the following scale:
  - 0 = no impact
  - 1 = indirect impacts
  - 2 = direct impacts
- **The second part** assesses the direction and magnitude of the impact of the questions answered by 1 or 2 in the first part. In the case of indirect and direct innovation impacts, the assessment will assess whether the impact is positive or negative and its significance. Verbal reasoning should be used alongside the scores.
- Significance of the impact is assessed on a 5-step scale.
  - 1, -1 = low impact
  - 0 = no impact
  - 2, -2 = high impact

The total scores of the quick test provide an indicative assessment of the innovation and business impact of regulation. The higher the total scores, the greater the impact on innovation and business, and the more important it is to assess the impact in more detail in different target groups during the law-drafting. Further guidance for the assessment is provided in Chapter 5.

The interpretation of the score is also influenced by the nature of the regulation being assessed. For example, does the legislative proposal explicitly aim to allow for innovation and new business in a broad range of sectors, or is it a very limited proposal in which the effects of innovation are secondary in relation to the other objectives of the regulation.

**Table 1. Questions and assessment scales for the quick test for innovation impacts**

<b>Quick test questions</b>	<b>Relevance</b> 0 = No impact 1 = Indirect impact 2 = Direct impact	<b>Significance of impact</b> -2 = High negative impact -1 = Low negative impact 0 = No impact 1 = Low positive impact 2 = High positive impact
1. The objective of the proposal is to promote the emergence of new markets, the reform of market structures or the development of services.		
2. The proposal regulates the application of technologies that are themselves undergoing a transformation or continuous development or are expected to undergo rapid development.		
3. The proposal will have an impact on the functioning of the market (e.g. market opening and access for new players).		
4. The proposal will have a guiding effect on the key characteristics of products and services (e.g. target levels of products and services, criteria, technical characteristics, raw materials).		
5. The proposal will affect the incentives for companies to invest in the development of new products, services and solutions (R&D incentives and resources, copyright, IP ownership).		
6. The proposal will have an impact on incentives and opportunities to experiment, pilot and/or bring new solutions to the market (e.g. public procurement, licensing processes).		

7. The proposal will have an impact on incentives to grow or expand business (e.g. in the Finnish market, invest-in).		
8. The proposal affects incentives and opportunities for cooperation between different actors (e.g. information sharing and exploitation, interfaces).		
9. The proposal will have an impact on the administrative costs for companies.		
10. The proposal will have an impact on competition between companies (competition law, price regulation).		
11. The proposal will have an impact on the opportunities for companies to recruit or otherwise leverage know-how essential for R&D activities and/or the results of other R&D activities.		
12. The proposal will have an impact on the efficiency of processes (production processes, service processes).		
13. The proposal will have an impact on the quality of products and services (improvement of quality, reduction of complaints and disputes).		
14. The proposal will have an impact on the RDI infrastructure (access to RDI infrastructures, development of RDI infrastructures).		
15. The proposal will have an impact on multidisciplinary (multidisciplinary in research and development).		
16. The proposal will have an impact on the creation of new businesses, entrepreneurship, spin-offs		

# 5 Innovation impact assessment

This chapter describes in more detail the three-phase implementation of the innovation impact assessment, which includes the quick test as well as a more in-depth assessment of the impact on innovation. The content of the chapter is based on the experience gathered in the pilots, which is described in more detail in Chapter 6.

The implementation of the innovation impact assessment is structured in three phases, which are presented in Figure 2.

The quick test question list (Table 1) is used as a tool in phases 1 and 2 in particular, but the questions can also be used in Phase 3.

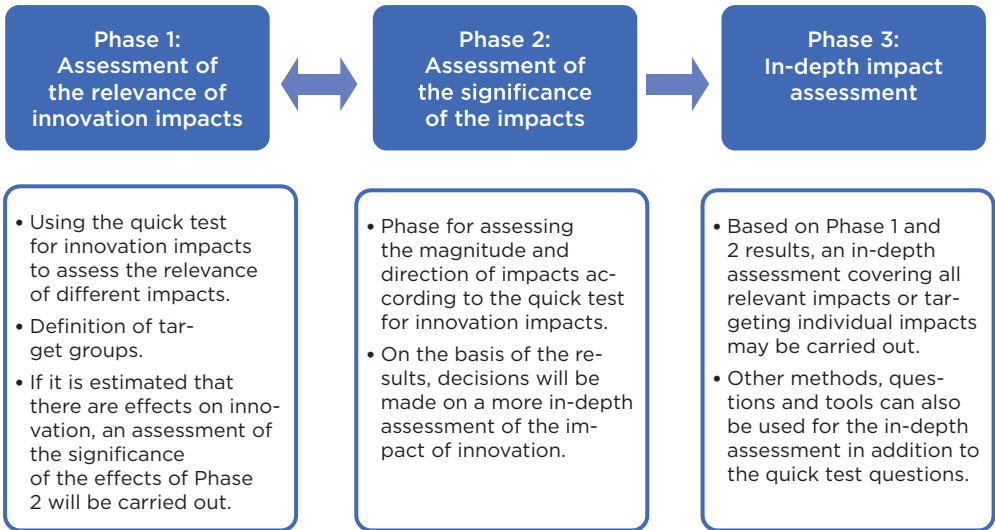


Figure 2. Phases of innovation impact assessment



## Phase 1: Assessment of the relevance of innovation impacts

The assessment of relevance examines whether the legislative proposal has any impact on the 16 perspectives to be assessed from the point of view of R&D and innovation. Scoring is determined by impact as follows: no impact (0 points), indirect impact (1 point) or direct impact (2 points).

Direct (i.e. immediate) impacts are ones that are directly attributable to the implementation of a piece of legislation. A direct impact exists where legislative proposal expressly regulates the matter in question. Indirect or consequential impacts are generated through chains of effects depending on other factors. This is the case, for example, when legislative proposal enables the development of markets and innovation activities, even if they are not directly regulated.



### **Does the legislative proposal have a direct or indirect impact on innovation?**

Why is it important to identify direct and indirect innovation impact?

Let us use the pilots as examples.

In the pilot testing automated driving systems, the assessment showed clear direct impacts on the application of fast-moving technologies and the development of new products and services. It is critical for companies to be able to test automated systems under real-world conditions.

The pilot on the built environment information system showed that the effectiveness of the regulation and the information system cannot be separated. The regulation provides for the establishment of an information system, but the practical solutions made in the information system nevertheless determine what kind of innovation impact will eventually arise in the broader corporate fabric. The information system can act as a catalyst for the indirect impact of the regulation or as a bottleneck. The identification of indirect impacts is important in order to also identify ways to promote positive impacts and to understand potential bottlenecks to effectiveness.

Opening up public data can enable data-driven innovations, but it does not directly generate them. The emergence of innovations depends on the willingness and ability of companies to make use of data. However, if regulation is intended to extensively influence the functioning of the market, for example by allowing the use of data, indirect effects can also be important.

The assessment of the relevance of the effects requires the identification of the target groups of the legislative proposal. It is often relatively clear to which companies, industries or research bodies the effects of the legislative proposal will be directed. For example, the guidelines for business impact assessments list the most typical target groups.<sup>16</sup> Target groups may also be defined in the context of the project objectives. However, it may also be unclear what the target groups are. Particularly when talking about the impact on innovation and the market, extensive account should be taken of sectors and of the new companies and markets that may emerge from the impact of the legislation. This is important, as new innovations and business models are often created at the interfaces of different sectors, and companies entering new and emerging markets may come from completely different sectors than before. If the quick test questions about the effects of the legislative proposal are difficult to answer, it may be necessary to assess and specify the target groups of the effects. If the target groups are very different, the assessment of the relevance of the quick test can be carried out separately for each target group.

The relevance assessment examines the significance from the point of view of each target group without taking a stand on the extent of the impact from the point of view of the piece of legislation being drafted. The target group may be very focused and the impact may be limited to a few companies, for example, but the impact on innovation may still be significant for this target group. It should also be noted that not all aspects of the quick test question list are relevant to all regulatory projects or to all target groups.

Phase 1 assessment may be carried out by the working group responsible for the regulatory project, by the responsible officials or by an external expert. Interviews can be used to identify, for example, the most relevant impacts and target groups. In addition to the quick test scores, a verbal justification should also be made as to why they are assessed to be impacts.

If, in the first phase, it becomes clear that a legislative proposal will have an impact on innovation, an assessment of its importance will be carried out.

## **Phase 2: Assessment of the significance of the impacts**

The assessment of the significance of the innovation impacts will be carried out on those quick test questions, which were assessed as having direct or indirect impacts in the first phase, i.e. which received 1 or 2 points. These questions will be assessed as to whether the legislative proposal has a low (1 point) or high positive impact (2 points) or a low (-1 point) or high negative impact (-2 points). The assessment of relevance (Phase 1) and significance (Phase 2) are natural parallels. Both assessments can be carried out at the same time, for example in a group of law-drafters or in a workshop involving stakeholders.

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<sup>16</sup> <https://tem.fi/ohjeet-ja-menetelmat-yrittysvaikutusten-arviointiin>

The assessment of the significance of the impact may take into account the extent and importance of the target group in the context of the scope of the regulation. From the point of view of different target groups, the impact can also be differently oriented and of different magnitude. For example, the legislative proposal may affect companies in different sectors in different ways, or it may affect companies of different sizes in different ways. In the case of intersectoral regulations with multiple perspectives, it can also be challenging to assess the average impact on all SMEs, for example, with one test and one figure, if the impact varies between sectors and between different types of companies. In these cases, rather than defining a single figure, i.e. identifying average impact, it may be more meaningful to assess the significance of the impacts separately from the point of view of the main target groups. If the impacts are high, they should be assessed more closely from the point of view of each target group in Phase 3.

**Example:**

**Impact assessment of the built environmental information system by target group and in different situations of use**

In the case of the pilot for the built environment information system, it was necessary to group Finland's extensive corporate fabric into more specific target groups according to their needs and opportunities in the utilisation of the future information system. As part of the assessment, six different target groups and situations of use were considered: 1. Architectural offices and design consultancy, 2. Real estate brokerage and leasing activities, 3. Implementation of energy and other renovations at individual properties, 4. Real estate management and maintenance activities, 5. Implementation of large-scale regional energy solutions, and 6. Data analytics/software companies outside the built environment sector.

In order to have a better overall view, the scores of the positive and negative impacts of the legislative proposal can be added separately. If the assessment of the significance of the impacts produces a list of zeros and ones, the proposal does not seem to have a major impact on innovation. If the proposal does not even aim to do so, there is no need to examine the impact on innovation in more detail. If the Phase 2 score is high (for example, more than 10 positive impacts or a high total of negative scores), it would be advisable to consider a more in-depth impact assessment in Phase 3 for high-risk innovation perspectives and significant target groups.

It is natural that the preparatory team responsible for the proposed legislation should carry out an impact assessment at an early stage. If the legislative proposal is significant, the assessment can be deepened, for example by means of interviews or external experts.

### **Phase 3: In-depth impact assessment**

If phases 1 and 2 result in an assessment of significant innovation impacts based on the total score, significant impacts emerge on individual questions, or the results conflict with the objectives of the legislative proposals, it is important to have a more in-depth impact assessment.

As a rule of thumb, if the sum of the scores of the significance assessment (Phase 2) separately for the positive or negative impacts is greater than 10, an in-depth impact assessment is needed.

Depending on the available resources, timetables and needs, the method of the actual implementation of the in-depth assessment and the methods of data collection should be selected on a case-by-case basis. The in-depth impact assessment may focus on, for example, a single major issue.

The questions of the quick test may serve as a basis for the in-depth impact assessment of the regulation. Based on the experience gained from piloting, the questions can be applied in both an interview survey and an online survey. If the regulation is a horizontal one that affects different sectors, it would be a good idea to look at the impact pathways in different sectors, for example through a case study.

The in-depth assessment can also use a framework based on the theory of change to illustrate the potential or intended effects of the legislative proposal and to identify potential bottlenecks and monitoring indicators. The aim is to describe the anticipated impacts of the legislative proposal in the preparatory phase as a pathway from the amendment to direct outputs, direct impacts and longer-term indirect impacts. See, for example, the change path compiled in the Research Information Hub pilot (Chapter 6).

The assessment phases 1, 2 and 3 should often be iterative. Once the in-depth Phase 3 analysis is complete, it is advisable to review the previous results and to refine them if necessary.

## **Data collection methods for the in-depth assessment of innovation impacts**

Surveys are useful if the target group of the legislative amendment is reachable and if the changes are clearly communicable to the target group, for example in the texts accompanying the survey. If the change cannot be described clearly and concisely, the answers may easily reflect the general view in the operating environment rather than the effects of the amendment in question. A survey is also suitable for a broad mapping of the views of parties well informed about the legislative proposal, such as lobby organisations and other experts. In practice, surveys are carried out electronically, and different platforms enable diverse editing and utilisation of the resulting data.

Interviews are the basic method for gathering information for a more in-depth impact assessment. From the operator's perspective, interviews can be used to explore cause-and-effect relationships and collect information, for example, to describe impact pathways. The disadvantage of interviews is the amount of work they require. It is often appropriate to order interviews from external experts.

Workshops are a good way to deepen the impact assessment in the form of a joint discussion with, for example, representatives of stakeholders. Workshops can use electronic platforms to facilitate the storage and subsequent use of views.

Case studies are a way of looking at sub-entities in a targeted way. Case studies can, for example, look at the impacts in different target groups in a differentiated way. For example, quick test question lists can be used as the analytical frame for case studies.

The preparation of the impact pathway can be used to illustrate the potential or intended effects of the legislative proposal and to identify bottlenecks and monitoring indicators. It describes the effects as a pathway from the legislative amendment to direct outputs, direct impacts and longer-term indirect impacts.

# 6 Lessons from pilot assessments

In 2021, the innovation impact assessment of three government proposals was carried out as pilot projects using different methods. All of them took advantage of the quick test for innovation impact assessment, and the implementation was broadly carried out in accordance with the three phases described in this guide. The planning and implementation of all assessments was carried out by an external expert body. The detailed results of each assessment have been reported separately. The pilots had steering groups consisting of representatives of law-drafters, the Ministry of Economic Affairs and Employment and the Ministry of Justice. This chapter summarises the lessons learned from the implementation of the pilot assessments.

The regulations assessed were:

1. Regulation of the built environment information system (RYTJ) (Ministry of the Environment)
2. Amendments to the Vehicles Act for the testing of automated vehicle systems (Ministry of Transport and Communications)
3. Act on the Research Information Hub (Ministry of Education and Culture)

## Built environment information system

### Legislative proposal and main findings of the assessment

The subject of the assessment was the Government proposal for the creation of a built environment information system (HE RYTJ), which is being prepared by the Ministry of the Environment. The aim of the amendment is to build an information system in which the planning and building permit data on the built environment held by the authorities will be made available in a uniform format. HE RYTJ is closely connected to the RYHTI project, which is building a national information system on the built environment in 2020–2024 in extensive cooperation. The assessment was carried out in the early stages of legislative drafting from June to August 2021, when the content of the government proposal was still largely unwritten.

Main findings of the assessment:

- The legislative proposal does not have a direct impact on innovation activities, but effects are indirectly generated through long chains of impact, and the act plays a role in enabling innovations.
- The innovation and business impacts of the act and the future information system cannot be separated. The legislative proposal enables an information system, but the solutions made in the system can act either as a bottleneck to the effects of the statute or as a catalyst for its indirect, positive effects on innovation and businesses.
- Effects and effectiveness will be generated through the use of the system and the aim must be to increase the number of users quickly, which is why the first clear benefits for users must be achieved quickly during the development.
- On the basis of the findings of the case studies, it can be concluded that the legislative proposal may have some impact on the innovation activities of enterprises depending on their sector and activities. On the basis of the case studies, the impact of the legislative proposal on innovation activity was found to vary from very low to fairly significant depending on, for example, how advanced the utilisation of digitalisation in the business area is.
- In order to have an impact, the future information system must be a cheaper, easier, more efficient and more reliable way for its users to use information on the built environment, and it should reduce the need for information to be provided to public authorities as a whole.

## How was the assessment carried out?

At the beginning of the assessment, the quick test for potential impacts on innovation was carried out as expert work, covering phases 1 and 2, on the basis of the preliminary draft of the government proposal. Interviews with the law-drafters and data analysis were used as support in responding. The preliminary outputs were reviewed with the pilot steering group. As HE RYTJ was only at an early draft stage, the analysis was based on the objectives set for the amendment rather than on the assessment of individual provisions. Based on the data analysis, a general description of the operating environment from the perspective of business operations was also made, i.e. what are the general challenges and bottlenecks that the new information system will solve.

A Phase 3 in-depth impact assessment was conducted as a case study. The purpose of the case studies was to provide concrete examples of the innovation impacts in accordance with the objectives of HE RYTJ in different sectors and in different parts of the built environment data ecosystem from the perspective of companies and lobby organisations. The selection of the case studies was based on expert work and the selection was approved by the pilot steering group.

The selected case study subjects were: 1. Architectural offices and design consultancy, 2. Real estate brokerage and leasing activities, 3. Implementation of energy and other renovations at individual properties, 4. Real estate management and maintenance activities, 5. Implementation of large-scale regional energy solutions, and 6. Data analytics/software companies outside the built environment sector.

The case studies were carried out on the basis of data analysis and by conducting individual and group interviews in companies and industry organisations. A total of 17 people were interviewed during the pilot's in-depth assessment phase. The list of questions for the quick test of companies' innovation impacts was applied in carrying out the interviews and analysing the case studies. A separate results report and analysis was conducted for each case study based on the quick test question list. On the basis of the results of the case studies, a summary was made, the initial estimates of the significance of the effects produced in Phase 2 were also revised for the final report and the justification for these was further specified.



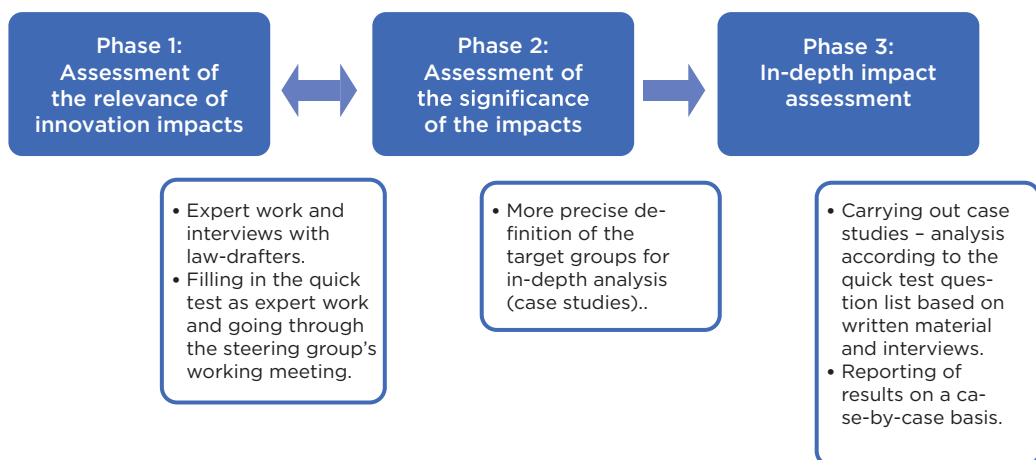


Figure 3. Impact assessment in the pilot

## What lessons were learned from the assessment?

The target group of the amendment is very extensive. Splitting the target population into separate case studies worked well. Although the results on the impacts and the significance of the changes varied between the different target groups, overall the case studies also revealed general conclusions.

The quick test question list served as a good basis for the analysis of the case studies and the reporting of the results. As part of the case studies, it also emerged that information systems generate impacts that were not taken into account in the initial quick test list. Based on the results of the pilot, these were added to the quick test question list. In general, the assessment phases 1, 2 and 3 presented in this guide are often iterative and, once the Phase 3 in-depth analysis is complete, it is advisable to review the previous results and to refine them if necessary.

The assessment showed that the effects of the legislative proposal and the information system it focuses on cannot be separated. Actual effectiveness will be achieved through solutions that will not be regulated by the statute. Alongside the public authorities' data on the built environment, we also need, for example, the possibility of integrating other authorities' data reserves. The most important thing is to ensure open interfaces when implementing the system, so that the data ecosystem can be expanded in the future. This is generally important to take into account when planning the impact assessment of enabling legislative amendments.

The legislative proposal focuses on the construction of a new information system and on enabling its implementation in different authorities' processes. During the assessment, it was pointed out that the preparatory work should be supported by lessons learned from other similar amendments. Concrete examples mentioned at national level included the comparison of the change and the impact on the

Waste Act (Material Hub) and the Act on the Residential and Commercial Property Information System (National Land Survey of Finland interface services). It would be useful for law-drafters to make use of cross-utilisation of impact assessments of different types of legislative amendments in different sectors.

### Key lessons of the assessment

- The effects related to the information system have their own special features, such as the efficiency of the processes and the quality of the service, which were easy to add to the quick test question list. At the preparatory phase, it is good to be prepared for iterative implementation of the innovation impact assessment.
- The larger and more diverse groups of companies or sectors are affected, the more customised methods are needed to meet the needs of the target groups. Case studies work well for an in-depth analysis of the impacts in different target groups.
- The quick test question list of impacts served as a good reference framework for case studies.

## Testing of automated driving systems

### Legislative proposal and main findings of the assessment

The pilot project of the Ministry of Transport and Communications was aimed at reforming the test plate certification procedure of the Vehicles Act in accordance with the Vienna Convention so that the driver requirement can be met by an automated driving system. This makes it possible for vehicles without a driver to be tested in traffic (commercially) on the basis of a test plate certificate. The assessment was carried out when the amendment was in the preliminary draft stage in November 2021.

Main findings of the assessment:

- The legislative proposal to be implemented is already very much a valid practice. The proposal will make the current practice clear and transparent. It will update the Act in relation to the current situation and ensure that Finland's testing practices remain at the forefront of international development.
- The biggest potential impact of the legislative amendment will be in the application of fast-moving technologies and the development of new products and services.
- The innovation and business impact of the amendment was generally positive and the change is desired by businesses. The potential increase in administrative costs in case of increased application and reporting obligations was seen as a risk.

## How was the assessment carried out?

The draft legislative proposal was subject to the quick test using the assessment expert work of Phases 1 and 2 and based on interviews of the law-drafters. At this stage, sections relevant and suitable for research organisations were added to the quick test. Testing of automated driving systems is often carried out in cooperation between companies and research organisations, and applicants for test plate certificates are often research organisations.

After completing the quick test, in-depth assessment data from Phase 3 were collected with a survey and interviews. The purpose of the survey was to create a quick test and test it as a survey tool that can be used to obtain quantitative and qualitative data on the innovation and business impacts and effectiveness of legislative proposal. The survey was targeted only at the eight operators who applied for a test plate certificate, which resulted in a limited number of respondents. It should also be noted that half of the operators applying for a test plate certificate were research institutes or higher education institutions. Based on the survey, the most important innovation and business impacts of the test plate certificate were identified, as well as whether the impacts were positive or negative. Based on these, a short in-depth interview was conducted with each respondent to refine the survey responses. In addition to the operators applying for a test plate certificate, three experts in the field were interviewed in order to gather background information and obtain further insight. A total of 9 people responded to the survey (one operator had two respondents) and 11 interviews were carried out.

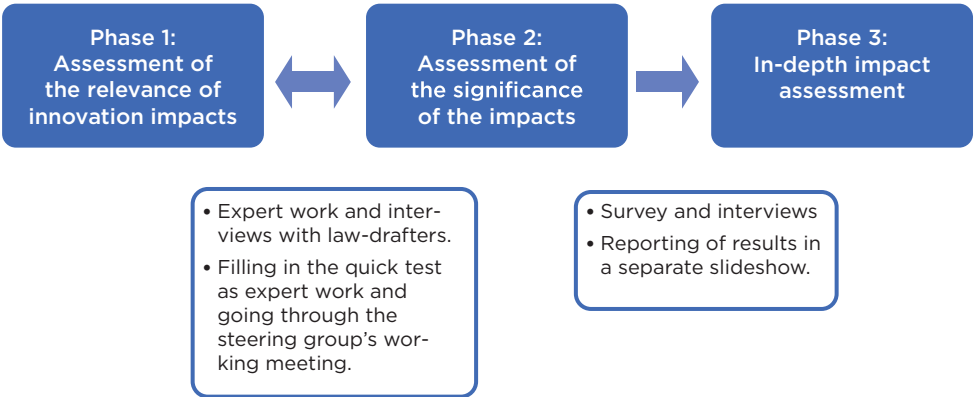


Figure 4. Impact assessment in the pilot

## What lessons were learned from the assessment?

The pilot focused on a change that was very different from the assessment of HE RYTJ. The change was much more targeted and the target group of the change was limited and uniform. The innovation impact categories of the quick test worked well, but the pilot demonstrated a need to include new sections to cover the aspects relevant to each legislative amendment. In the testing of automated driving systems, it is essential to take into account research perspectives. However, the addition of new essential points did not cause any particular problems, and the basic body of the quick test worked well.

The legislative change to be implemented is already very much a prevailing practice for companies and, according to the law-drafters, the change has been requested by the target group. According to the respondents, it has already been the practice of almost all the companies applying for a test plate certificate to maintain close contact with the authority issuing the test plate and to report on their progress. In such a situation, it may be considered that, for the innovation impact assessment, it is sufficient that for example the law-drafters, fill in a quick test and that an in-depth impact assessment be carried out only on the outstanding issues.

The biggest potential impact of the legislative proposal was anticipated to be the application in the fast-moving technologies and the development of new products and services. When commercialisation is possible, it opens up business and innovation opportunities for companies and encourages technological development. On the whole, the clarification of the process of applying for a test plate certificate does not have a major impact in itself, but it is a prerequisite for more extensive business in the rapidly developing field. In the case of corresponding changes, it is worth considering at which changes the impact assessment should be targeted.

The collection of in-depth assessment data through a survey worked well, although the target population in the pilot was too small for the validity of the survey results. The survey provided quantitative data, was easy to implement and enabled conclusions to be drawn. The interviewees were asked about their feelings about the survey, and they found it clear and quick to complete. However, it was only through interviews, which are an essential complementary form of data collection, that the root causes of the impact could be tackled. The use of a survey is justified if the respondent population is sufficiently large and the distribution of the survey is practical to carry out

## Key lessons of the assessment

- When the target population is limited and the legislative proposal is well targeted, the use of a quick test is a quick and easy way to get an overview of the innovation impact.
- An electronic survey is an effective tool for gathering information (1) for easily understandable and limited amendments and/or (2) from well-informed target groups.
- A survey provides quantitative data, is easy to implement and allows conclusions to be drawn, but it is only through interviews that an in-depth analysis of possible obstacles, problems and impact chains can be achieved.
- It may be difficult to separate the indirect effects of a regulation from the effects of other factors of the operating environment.
- The dispersion of the answers tells more than the average. The reasons for the dispersion can be explained not only by differences in the impact of innovation on different target groups, but also by the ability of respondents to understand or interpret legislative amendments and their direct or indirect impacts.

## Research Information Hub

### Legislative proposal and main findings of the assessment

The subject of the assessment was the Government proposal for an act on the Research Information Hub (HE 177/2021), prepared by the Ministry of Education and Culture. The Research Information Hub compiles and disseminates metadata on scientific research carried out in Finland, such as publication data, descriptive data of research data and financial information, for use by research actors. The assessment was carried out on the basis of a draft that was circulated for comments in October and November 2020.

Main findings of the assessment:

- The government proposal may affect the incentives for companies to invest in the development of new products and services, as the information hub may in the future increase the usability of the information and thereby provide incentives to develop new services based on the information and to test opportunities for the development of services utilising the Research Information Hub.
- The Research Information Hub would also affect incentives and opportunities for cooperation between different actors (e.g. information sharing and exploitation, interfaces), since one of the key objectives of the information hub is to increase cooperation and dissemination of research information. Similarly, the Research Information Hub will have an impact on the opportunities for companies to recruit or otherwise leverage know-how essential for RDI activities and/or the results of other RDI activities, as the aim of the information hub is to increase the dissemination of the results of RDI activities and information on RDI know-how.
- The government proposal's innovation-friendliness and technology-neutrality is promoted by taking into account the commensurability and open interfaces of the data collected.
- Business impacts would also be enhanced by paying attention to the provision of advice and training to enterprises in the context of regulatory implementation.

## How was the assessment carried out?

The assessment was carried out as a pilot project in spring 2021, using the updated research and innovation impact assessment framework and quick test developed as part of the pilot project. In addition, the pilot compiled a broader list of tools and approaches to consider the innovation-friendliness of legislative proposals. The aim was to concretise the results of the VN TEAS project (2020:27) and international practices, in particular the European Commission's research and innovation impact assessment tool (Tool #22), using the reference framework for assessing innovation impacts.<sup>17</sup>

The government proposal was subjected to a quick test for potential innovation impacts, which assessed the relevance and significance of innovation impacts. The quick test was carried out as expert work by analysing the Government proposal for an act on the Research Information Hub and the data collected in connection with the preparation. In addition to the quick test, the assessment prepared an impact pathway to illustrate the potential impact of the draft proposal on research and innovation activities (see Figure 5).

At the beginning of the work, discussions were held with the Ministry of Economic Affairs and Employment, the Ministry of Education and Culture and the CSC IT Center for Science. In addition, a workshop was used to identify and answer the most important assessment questions and to specify the impact pathway. The workshop brought together experts and stakeholders in the field.

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<sup>17</sup> Salminen, V. & Härmälä, V. (2021)

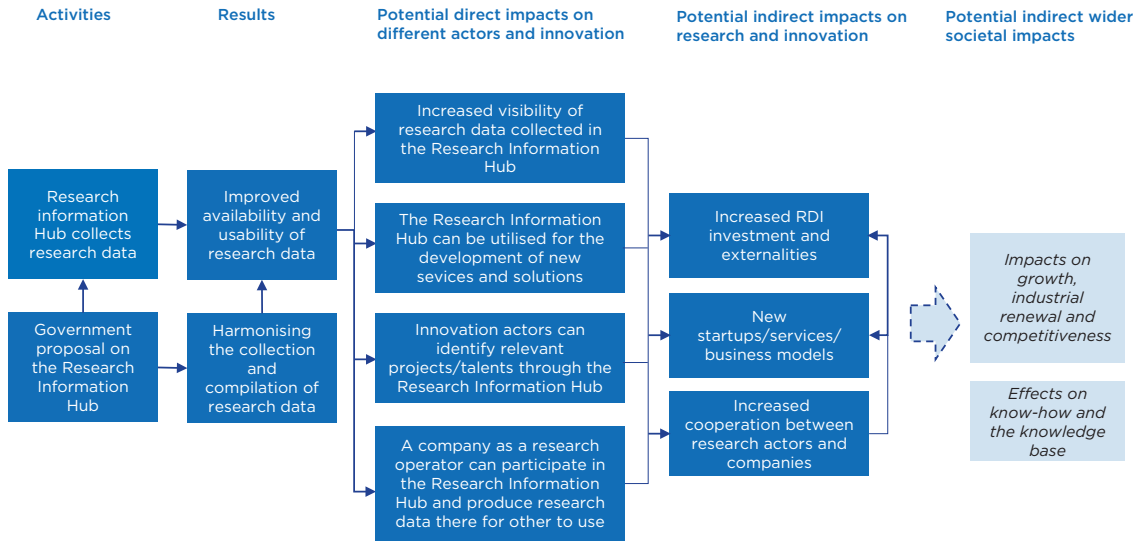


Figure 5. Impact pathway generated from the Research Information Hub<sup>18</sup>

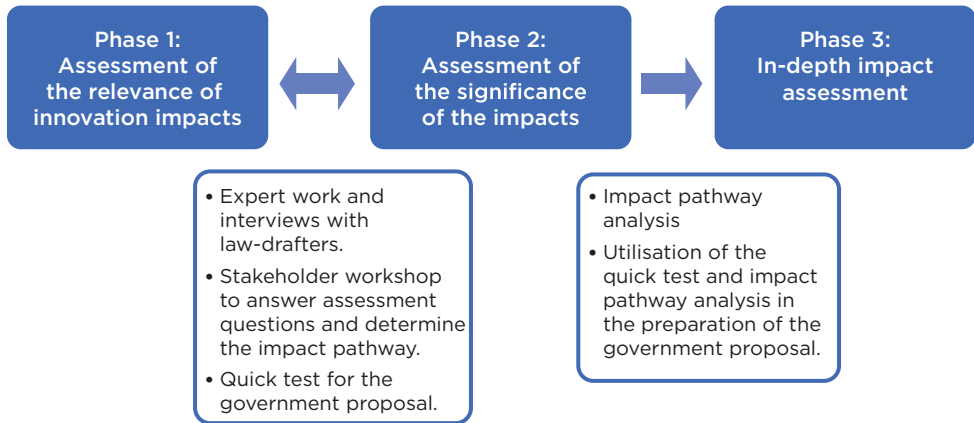


Figure 6. Impact assessment in the pilot

<sup>18</sup> Salminen, V. & Härmälä, V. (2021); updated January 2022



## What lessons were learned from the assessment?

Based on the pilot, the quick test and impact pathway serve as good and useful tools for identifying, structuring and assessing the impact of innovation. Although the effects on research and innovation typically only manifest in the long term – and even then they can be very difficult to verify – the tools utilised in the pilot can be used to cost-effectively examine the potential impact of a proposal and to identify potential bottlenecks, needs and issues for more comprehensive assessment and/or implementation.

The assessment itself highlighted the key role of legislative proposal in the full implementation of the Research Information Hub, in particular for the opening of interfaces and the implementation of an open information service. The practical implementation of the Research Information Hub is of great importance for the realisation of the innovation impact. The conclusion was also clear that the government proposal's innovation-friendliness and technology-neutrality can be promoted by the commensurability of the data collected and by informing about the Research Information Hub.

The results of the innovation impact assessment have been used in the preparation of the impact assessment of a government proposal to Parliament (HE 177/2021). A report of the Research Information Hub was presented in the cooperation group for the development of law drafting of the Ministry of Education and Culture in spring 2021 in order to implement an innovation-friendly regulatory approach among law-drafters. An assessment of the impact on innovation is already being carried out in other legislative drafting projects, for example in the ongoing comprehensive reform of archive legislation.

### Key lessons of the assessment

- The quick text and the definition of the impact pathway work well in identifying the innovation impacts and assessing their significance.
- The legislation is of key importance for the full implementation of the Research Information Hub, and the practical implementation is of great importance for the impact.
- Informing companies about the Research Information Hub and its potential for action is a means of increasing its utilisation by companies.

## In brief

This guide provides information and practical tools for innovation impact assessment in law drafting in particular in the legislative proposal phase.



Ministry of Economic Affairs  
and Employment of Finland