Evaluation of the Norwegian Data Protection Authority's Regulatory Sandbox for Artificial Intelligence

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Foreword

The Norwegian Data Protection Authority's regulatory sandbox for responsible artificial intelligence was established in the autumn of 2020. The goal of the sandbox is to promote the development of innovative artificial intelligence solutions that, from a data protection perspective, are both ethical and responsible.
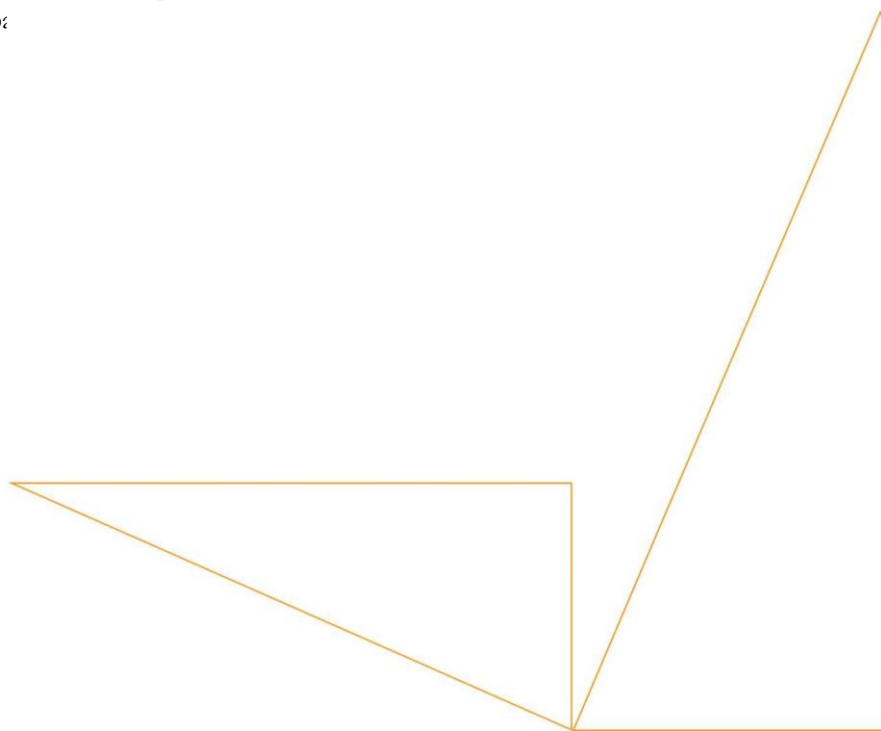
Agenda Kaupang has evaluated the sandbox on behalf of the Data Protection Authority. In this evaluation, we have consulted with experts in the field: Associate Professor Per-Arne Andersen, Department of Information and Communication Technology at the University of Agder, and Steinar Østmoe from the law firm Deloitte Advokatfirma.

The data collection has consisted of a series of interviews, in addition to reviews of project documentation, websites, background documents and information about and from the sandbox on other media platforms.

From Agenda Kaupang, the project has been executed by Morten Stenstadvold, Lars Øystein Eriksen, and Tom E. Markussen. Markussen was the lead consultant for the project.

We would like to thank the informants who took the time to be interviewed. We would also like to thank the Data Protection Authority for an interesting assignment. Furthermore, we would in particular like to thank Eirik Gulbrandsen, Arild Opheim and Hallstein Husand from the Data Protection Authority for good feedba

Oslo, May 2023

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Summary

One of the measures included in the Solberg Government's "National Strategy for Artificial Intelligence" was the establishment of a regulatory sandbox for responsible artificial intelligence (AI). The Data Protection Authority's regulatory sandbox ("the sandbox") was established in the autumn of 2020, for a period of two years. It was funded by supplemental appropriations in the National Budget. 2021 was the sandbox's first year of operation.

Artificial intelligence represents vast opportunities for the public and commercial sectors, as well as for the general population, but the technology also brings challenges related to the use of personal data and data protection. The sandbox is intended as a tool to help entities in the public and private sectors who are developing solutions that use artificial intelligence, to make sure the solutions are data protection-friendly and comply with laws and regulations. The goal of the sandbox is to promote the development of innovative artificial intelligence solutions that, from a data protection perspective, are both ethical and responsible.

The sandbox is still in an early stage. The Data Protection Authority has requested an external evaluation of the sandbox, in part to assess whether the work has the intended effect in light of its overall objectives, both externally and internally. The outcome of these evaluations will be used as a foundation to build an effective and robust sandbox for the future.

We give some overall findings and assessments below, before we summarize key findings and assessments for each evaluation question.

The sandbox is a good initiative, but it does have some challenges

The respondents we interviewed have a predominantly positive view of the sandbox. The sandbox meets the needs of the private and public enterprises that have participated. The participants benefit, and from what we have seen, the Data Protection Authority also benefits greatly from the lessons learned. The sandbox helps meet the needs of individuals and society, by generating knowledge of the intersection between artificial intelligence, data protection and the ethical use of artificial intelligence, and by solutions based on artificial intelligence being developed in a secure environment where ethics and responsibility are emphasized.

The Data Protection Authority has established a comprehensive framework for the sandbox and communicated broadly about the sandbox and its purpose. A good application process, with clear application criteria, has been established for those wishing to participate i the sandbox. The Data Protection Authority has emphasized the selection of different types of projects, from both the private and public sectors, that support the objectives of the scheme. The projects take an interdisciplinary approach, and co-creative workshops are a key part of the method. The sandbox also emphasizes communication about the projects during and after the sandbox process. In our opinion, the sandbox has achieved its goal of highlighting and raising awareness of data protection-friendly and ethical use of artificial intelligence.

We nevertheless find that the Data Protection Authority could further diversify its communication about the sandbox projects, both on the sandbox website and through other channels. There is also a potential to go deeper into the subject matter, not least in the technological area. In our opinion, the Data Protection Authority should seek to bring more technological expertise into sandbox activities. Such expertise is important, not only to uncover the technological potential of the projects, such as data protection by design and federated learning, but also to make the projects and the sandbox even more relevant from a technological perspective. Generally, we feel that the sandbox could do more to identify which target groups are being reached and which needs various subgroups have, in order to take better advantage of lessons learned.

Summary of our assessment of evaluation questions and recommendations for adjustments to the sandbox

This evaluation has focused on questions that concern both the organization of the sandbox and its effects. Here, we summarize our key findings and assessments for each evaluation question. We also recommend some adjustments that should be considered for future sandbox projects.

Has the Data Protection Authority's sandbox worked as intended in light of the objectives defined by the appropriating ministries?

Our interviews indicate that the ministries are generally happy about the way the sandbox has been organized and believe that the objectives of the sandbox have largely been achieved. At the same time, they want the findings to be communicated in ways that ensure all relevant target groups are reached. This has also been emphasized in the Data Protection Authority's own plans for the continuation of the sandbox, now that it is being made permanent.

Has the Data Protection Authority's work been appropriate for its own defined goals?

The sandbox should be a service designed to support organizations that use personal data to develop AI-based products and services that may be of public benefit. The goal is for the sandbox to produce benefits for organizations, the Data Protection Authority, individuals and society in general.

In our opinion, the Data Protection Authority has established and executed the sandbox in such a way that its objectives are attained. Both the sandbox application process and the way it is executed support the objective benefiting the organization concerned and the Data Protection Authority, as well as both individuals and society in general.

It is important that the public sector make the most of the resources devoted to the field of artificial intelligence and adjacent areas within digitalization. In connection with the sandbox being made permanent, its scope has also been expanded to include data protection-friendly innovation and digitalization. We believe it is important for the sandbox that the Data Protection Authority increases the extent to which it works with other public bodies and relevant private actors in the same field.

On this basis, we find that the sandbox has some potential for improvement:

► The Data Protection Authority can strengthen its technical expertise, thereby enabling it to also provide advice and guidance on the technical aspects of the use of artificial intelligence and other forms of digitalization. This expertise could be strengthened by adding internal resources or by drawing external expertise into individual sandbox projects.

► The Data Protection Authority should consider whether the sandbox should prioritize specialized areas, in a similar way to the UK regulatory sandbox. The prioritization of areas could, for example, be based on risk/materiality assessments.

► The Data Protection Authority should facilitate more systematic collaboration with other public and private actors in the AI field, such as the Norwegian Digitalisation Agency and the Norwegian Directorate of Health.

► The Data Protection Authority's internal process for approving final sandbox project reports also take too long and attempts should be made to shorten it.

Has the Data Protection Authority reached the relevant target groups for the measures?

The sandbox has a lot of externally directed activities. The target groups for the sandbox are many and extremely varied. The prioritization of certain target groups would probably generate considerable benefits. This is especially true for universities and university colleges, where both research communities and students are key target groups. This is also true for technology development communities, which may be hesitant about processing personal data because they do not feel they know enough about data protection. The sandbox could seek these communities out and initiate a dialogue on how to work together to make better use of the work being performed in the sandbox.

In the context of this evaluation question, we recommend the following actions:

► Establish a dialogue with the higher education sector on the possible dissemination of insights from the sandbox to research and education communities.

► Establish a dialogue with both small and large technology enterprises to discuss how they may benefit from the sandbox. One possibility could be to test out collaboration with clusters under the direction of Innovation Norway, which is already working to help enterprises innovate, or partner with the Norwegian Association of Local and Regional Authorities (KS) and select municipal networks.

► The Data Protection Authority should consider how insight into, and the potential need for, regulatory development can be followed up on, both during and after projects.

► The Data Protection Authority should increasingly measure the efficacy of communication initiatives related to the sandbox, in addition to measuring the activities undertaken within it.

► Consideration should be given to the potential benefits of more deliberately recruitment of projects on topics and from enterprises where sandbox activities may generate substantial external ripple effects.

How successful has communication to and dialogue with target groups been?

The fact that the sandbox has a dedicated communication resource is good. It is also good that there is a dedicated sandbox web page. Our respondents find a lot of the information on this page is useful. The sandbox also does a good job of raising awareness of the sandbox and of these issues in general. However, the extent to which the scheme reaches relevant communities with more detailed insights from the projects could probably be improved.

Based on this, we recommend the following actions:

► Learn more about what various subgroups need, in order to apply insights from the sandbox. This could, for example, be achieved by testing final project reports and other communication on users, in order to adjust the content based on what the goals for the various types of communication are.

► Require final project reports to delve more deeply into the sandbox findings. Consider preparing multiple reports, each tailored to a different readership (i.e. specialists and non-specialists), in order to reach a wider range of target groups. The goal should be that AI developers can read the report and apply the insights from it in their own work.

► Prepare more cross-project analyses and reports on issues that come up in many AI projects.

► Create a register of issues that repeatedly come up in sandbox projects. Such a register will make it easier to apply the assessments and results from the projects in other contexts.

Which specific benefits has the sandbox provided, both internally and externally?
The sandbox has provided project participants with a good to very good learning outcome. The Data Protection Authority has provided strong legal expertise, in combination with a useful method (sandbox method). The critical sparring participants have engaged in through the sandbox has proved valuable and given them useful knowledge of their own technology, data protection and communication with their own users on these matters.

Based on our assessment, it is unlikely that the project participants could have achieved these same benefits in any other way. While the projects probably could have performed some of the legal assessments with help from other legal specialists, the comprehensive nature of the sandbox method yields benefits it is hard to see the participants achieving in another setting. This is due to the combination of having a critical sparring partner with considerable expertise and the opportunity to connect with other projects in a similar situation, which leads to useful insights. By participating in the project, the enterprises also attract additional external expertise. Participation also gives the enterprises an incentive to go through with a type of project many of them perceive as risky, due to legal grey areas and a lack of established legal precedent.

How do the target groups perceive the effects of sandbox activities based on their own needs?
The participating enterprises perceive the effects of the sandbox to be very good. The effect for enterprises that have not participated in the sandbox is more difficult to measure. Even so, our interviews indicate that the broader target group did not learn as much from the initiative as might have been hoped. It could still be possible for the sandbox to make changes in order to better communicate the insights gained.

Based on this, we recommend the following actions:

► In addition to establishing a dialogue with technology enterprises on how these can benefit from the sandbox, the sandbox could present a larger number of papers to and organize more workshops for developer communities, clusters or actors with sectoral or regional networks and overviews.

How does the Data Protection Authority internally perceive the effect of sandbox activities?
In general, there could be conflicting objectives between how sandboxes work and the organizations that own them. This is because employees, who have performance targets to meet in their respective departments, are taken out of "ordinary operations" to work in the sandbox, without being fully replaced in the department where they normally work. This problem is not as problematic for the Data Protection Authority sandbox, because it has been allocated its own resources which, overall, compensate for the resources brought in as project managers. It is nevertheless a challenge for administrators, who normally perform supervisory activities, to adapt to the sandbox method and perform more of a citizens' ombudsman role.

Based on this, we recommend that:

► The sandbox should consider using permanent and experienced project managers, who know how projects using the sandbox method should be led and managed.

1 Introduction

In this chapter, we summarize the background for the Data Protection Authority sandbox for artificial intelligence and for this evaluation. We also present the questions the evaluation seeks to answer and some limits for the evaluation. Finally, we give a brief overview of the rest of the report.

1.1 Background

One of the measures included in the Solberg Government's "National Strategy for Artificial Intelligence"[1] was the establishment of a regulatory sandbox for responsible artificial intelligence (AI). The Data Protection Authority's regulatory sandbox ("the sandbox") was established in the autumn of 2020, for a period of two years. It was funded by supplemental appropriations in the National Budget. 2021 was the sandbox's first year of operation.

Artificial intelligence represents vast opportunities for the public and commercial sectors, as well as for the general population, but the technology also brings challenges related to the use of personal data and data protection. The sandbox is intended as a tool to help entities in the public and private sectors to comply with laws and regulations and to develop data protection-friendly solutions that use artificial intelligence. The goal of the sandbox is to promote the development of innovative artificial intelligence solutions that, from a data protection perspective, are both ethical and responsible.

In the autumn of 2022, the National Budget proposed allocating funding for permanent operation of the sandbox, albeit with a slightly modified focus. The proposed budget for 2023 suggested establishing *"a permanent scheme for a regulatory sandbox for data protection-friendly innovation and digitalization, which is a specialized guidance initiative offered by the Data Protection Authority. The regulatory sandbox is important for identifying technological opportunities within the framework of data protection legislation and thereby for stimulating data protection-friendly innovation and digitalization."* [2]

The sandbox has been funded jointly by the Ministry of Local Government and Regional Development, the Ministry of Labour and Social Affairs, the Ministry of Health and Care Services, the Ministry of Education and Research, the Ministry of Trade, Industry and Fisheries, and the Ministry of Transport.

The sandbox is still at an early stage. The Data Protection Authority has requested an external evaluation of the sandbox, among other things to assess whether the work has the intended effect in light of the sandbox's overarching objectives, both externally and internally. The intention has been for the outcome of these evaluations to be used as a foundation to build an effective and robust sandbox for the future.

1.2 Evaluation questions

The Data Protection Authority wanted the evaluation to answer a number of specific questions (evaluation questions):

► Has the Data Protection Authority's sandbox worked as intended in light of the objectives defined by the appropriating ministries?
► Has the Data Protection Authority's work been appropriate for its own defined goals?
► Which specific benefits has the sandbox provided, both internally and externally?
► Has the Data Protection Authority reached the relevant target groups for the measures?

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[1] *Ministry of Local Government and Modernisation (2020): National Strategy for Artificial Intelligence. Strategy.*
[2] *Prop. 1 S (2022 – 2023), Ministry of Local Government and Regional Development*

- ► How successful has communication to and dialogue with target groups been?
- ► How do the target groups perceive the effects of sandbox activities based on their own needs?
- ► How does the Data Protection Authority internally perceive the effect of sandbox activities?
- ► Which changes, if any, should be made in the further operation of the sandbox?

1.3 Limitations

In this evaluation, we have to only a limited degree considered the internal effects of the sandbox on the Data Protection Authority. How the sandbox has been organized internally within the Data Protection Authority has also not been a part of this evaluation.

In evaluations of public initiatives, the use of resources and the cost effectiveness of the initiative are often considered. *Efficiency* is a key evaluation criterion used by the OECD[3] to assess how resources are used in a public initiative or project. The evaluation of efficiency includes economic efficiency, operational efficiency and timeliness. In this evaluation, we have not considered cost-effectiveness or other aspects of efficiency in relation to the sandbox. However, the use of resources in the sandbox was discussed in the Data Protection Authority's annual report for 2022.[4]

1.4 About the report

In chapter 2 we present our methodological approach and data collection. In chapter 3 we summarize the background for the establishment of the sandbox and provide an overview of the different rounds of applications and activities related to the sandbox, including promotional activities.

We have opted to organize the main part of the evaluation in two chapters: chapters 4 and 5. Here, we present the evaluation questions, facts and the data material, and we assess these in light of the different evaluation questions. Chapter 4 focuses on the questions that concern the structure of the initiative, whereas chapter 5 focuses on the questions concerning its outcomes. In chapter 6, we summarize our evaluation. This chapter also includes recommendations for adjustments to the sandbox.

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[3] *https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm*
[4] *https://www.datatilsynet.no/om-datatilsynet/arsmeldinger/arsrapport-for-2022/*

2 Approach and method

In this chapter, we describe our scientific approach and methods, including the social science methods we have used and our data collection.

2.1 On our approach in general

Based on the evaluation questions listed in chapter 1, the main purpose of this evaluation is to perform a type of *effectiveness evaluation.* This is a classic type of evaluation, where the goal is to determine whether an initiative "works", i.e. if the initiative has the intended effects. In order words, the goal is to explore whether the given effort, in this case the sandbox, is the cause of the results and effects achieved, and whether these are in line with the objectives. This is often called the initiative's *additionality* – whether the initiative contributes to the realization of effects that would otherwise not be realized. The Data Protection Authority wanted to evaluate whether the sandbox has the intended effect.

An evaluation of the sandbox can also be justified pursuant to the rules for financial management in the public sector.[5] Article 16 of these rules specifies that all enterprises must perform evaluations to gain insight into effectiveness, attainment of objectives and results for all or part of the enterprise's responsibilities and activities. The frequency and scope of these evaluations shall be determined by the nature, risk and materiality of the activities.

The primary focus of this evaluation is the sandbox's effect on external sandbox participants and others who have not participated in the initiative, but who may be interested in learning from the sandbox. We can illustrate this in a result chain as shown in Figure 1 below.

Figure 1 Result chain for the sandbox

Figure 1 illustrates how the sandbox was established to help stimulate the innovation of ethical and responsible artificial intelligence in a data protection perspective. More specifically, the sandbox is intended to provide cost-free guidance to selected private and public enterprises through the recruitment of participating projects. The sandbox should also provide information and learning opportunities to enterprises that are not themselves participants in the sandbox. Prioritizations should be made, based on a set of selection criteria, to ensure that a wide range of actors, from small startups to large public enterprises, is represented.

[5]*https://www.regjeringen.no/globalassets/upload/fin/vedlegg/okstyring/reglement_for_okonomistyring_i_staten.pdf*

The sandbox should, through guidance and external communication activities, contribute to achieving the desired effects. These could be user effects, such as increased understanding among project participants of regulatory requirements for data protection when using artificial intelligence, and learning effects for enterprises that are not part of the projects.

2.2 Data collection

The data on which this evaluation is based include notes from interviews with project participants, expert resources and Data Protection Authority employees who work on the sandbox, in addition to documents, websites, etc. related to the sandbox.

2.2.1 Interviews

We conducted interviews with various key actors, including representatives from projects who participated in the sandbox, Data Protection Authority employees with a connection to the sandbox, employees in other Norwegian sandboxes, and artificial intelligence experts.

Most interviews have been semi-structured, in-depth interviews, where we have had conversations with the informants based on customized interview guides. In these interview guides, the topics have largely been pre-defined, but it has also been possible to go deeper into topics and issues that emerged during the interview. Appendix A includes the interview guide used in interviews with project participants and external experts.

In total, we conducted 25 interviews or conversations. Table 1 below provides an overview of the different categories of informants and the number of interviews/conversations.

Table 1 Actors/informants we have interviewed and the number of interviews

Actors/informants	Number of interviews/conversations
Employees and managers with the Data Protection Authority	2
Sandbox project participants	6
External experts, enterprise representatives, etc.	13
Representatives of appropriating ministries	4[6]
Total	25

2.2.2 Document review

We have reviewed various project documents, websites, reports, podcast episodes, etc. that are relevant for the sandbox. This has been necessary to properly clarify several issues, such as the background for the initiative, how it has been implemented, how work in the sandbox is carried out and assessments related to the externally directed activities (communication activities). In this report, we refer to documents, web pages and other sources in footnotes.

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[6] *Three of these informants answered one set of questions via email*

3 About the sandbox

In this chapter, we take a closer look at the background for the establishment of the sandbox, the framework for the initiative, the application rounds that have been completed so far, and the activities that have been carried out under the initiative. This review will also provide a basis for our assessments in the next chapters.

3.1 Background for the establishment of the sandbox

In its "National Strategy for Artificial Intelligence", the Solberg Government announced that it wanted to establish a regulatory sandbox for data protection under the remit of the Data Protection Authority. The strategy pointed to the initiative serving several purposes:

► Enterprises can gain a better understanding of the regulatory requirements for data protection and reduce the time from development and testing to actually rolling out AI solutions to the market. Systems that are rolled out after being developed in the sandbox can serve as trail blazers, and can help other enterprises that are interested in developing similar systems.

► The authorities can gain a better understanding of new technological solutions and more easily identify potential risks and problems at an early stage so that guidance material can be produced to clarify how the regulations should be applied.

► The authorities and industries can identify sectors with a need for their own industry standards.

► Individuals and society as a whole will benefit from new and innovative solutions being developed within responsible parameters.

3.2 What is a regulatory sandbox?

The "National Strategy for Artificial Intelligence" pointed out that regulatory sandboxes first and foremost are a policy instrument for promoting responsible innovation. Regulatory sandboxes are intended to give enterprises opportunities to test new technologies and/or business models within specific parameters.

The concept of regulatory sandboxes is best known in the financial sector, where supervisory authorities in several countries have given enterprises opportunities to test specific products, technologies or services on a limited number of customers for a limited time period and under close supervision.

In a white paper, Meld. St. 30 (2019–2020 *An innovative public sector*[7], sandboxes were presented as a good method for testing new technology, statutory regulations and business models. In general, sandboxes can give enterprises a better understanding of regulatory requirements and authorities a better understanding of new technological solutions. The close collaboration between actors and authorities in the sandbox will make it easier to identify risks and problems and to sketch out solutions.

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[7] *Ministry of Local Government and Modernisation (2020). Meld. St. 30 (2019–2020) An innovative public sector — Culture, leadership and competence*

In addition to the Data Protection Authority's regulatory sandbox for artificial intelligence, Norway has established two other sandboxes under the auspices of public regulators: The National Archives of Norway's regulatory sandbox for archives, data and public access[8], and the Financial Supervisory Authority of Norway's sandbox for fintech[9].

3.3 About the framework

The Data Protection Authority has developed a framework for its sandbox.[10] This framework covers objectives, statutory regulations, requirements and other relevant information for potential participants in the sandbox. We have included the main points from this framework below.

The framework states that the sandbox will provide free guidance to selected private and public organizations of different types and sizes and from different sectors. The framework also states that the Data Protection Authority would like the sandbox to represent a broad spectrum of organizations, from small startups to large public enterprises.

The sandbox applies the definition of artificial intelligence used in the National Strategy for Artificial Intelligence:

> Artificial intelligence systems perform actions, physically or digitally, based on interpreting and processing structured or unstructured data, to achieve a given goal.
> Some AI systems can adapt their behaviour by analysing how the environment is affected by their previous actions.

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[8] *https://www.arkivverket.no/arkivutvikling/innebygd-arkivering/regulatorisk-sandkasse*

[9] *https://www.finanstilsynet.no/tema/fintech/*

[10] *https://www.datatilsynet.no/regelverk-og-verktoy/sandkasse-for-kunstig-intelligens/rammeverk-for-den- regulatoriske-sandkassen/*

Overall objective

The overall objective of the sandbox is to promote the development and implementation of ethical and responsible artificial intelligence from a data protection perspective. The goal is for the sandbox to produce benefits for organizations, the Data Protection Authority, individuals and society in general.

► **For organizations,** the regulatory sandbox aims to promote greater understanding of regulatory requirements and how AI-based products and services can meet the requirements imposed by data protection regulations in practice. Examples and experiences from the sandbox will be communicated to the wider public, for the benefit of non-participating organizations as well.

► **For the Data Protection Authority**, the regulatory sandbox aims to increase our understanding and knowledge of the practical applications of artificial intelligence. We will use this knowledge to strengthen the Data Protection Authority's guidance, administrative processes, supervisory methods and recommendations to legislators and policy-makers in matters involving AI and privacy.

► **Individuals and society** in general will benefit from the development and implementation of AI-based solutions within a framework that emphasizes accountability and transparency, and that takes into account the individual's fundamental rights. This builds a foundation for the development of services customers and inhabitants can trust.

In an assessment of when artificial intelligence is responsible, the sandbox applies three main principles for responsible artificial intelligence:

1. Lawful — respecting all applicable laws and regulations
2. Ethical — respecting ethical principles and values
3. Robust — from both a technical and societal perspective

These three principles are explained in more detail in the framework.[11]

Statutory regulations

The Personal Data Act and the General Data Protection Regulation (GDPR) constitute the statutory foundation for activities taking place in the sandbox. Other data protection regulations under the Data Protection Authority's remit can also be used to inform activities in the regulatory sandbox. This includes the Police Databases Act, the Personal Health Data Filing System Act, the Health Research Act, and the Medical Records Act. When necessary, the Data Protection Authority can work with other authorities to provide recommendations on adjoining regulations.

The Data Protection Authority cannot grant exemptions from regulations in the sandbox. The framework states that the Data Protection Authority has no intention of initiating corrective measures during participation in the sandbox.

Sandbox activities

Project participants will receive advice and guidance from an interdisciplinary team from the Data Protection Authority, to ensure that the service or product is in compliance with relevant regulations and adequately takes data protection into account. The sandbox is open to any and all topics that highlight the use of personal data within artificial intelligence.

The framework states that the duration of sandbox participation will vary from project to project, but that a project period of three to six months is presumed to be appropriate.

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[11] https://www.datatilsynet.no/regelverk-og-verktoy/sandkasse-for-kunstig-intelligens/rammeverk-for-den- regulatoriske-sandkassen/

Each participant will, in collaboration with the Data Protection Authority, draw up an individual plan, describing the need for guidance, how this guidance shall be prepared and implemented. 3–5 workshops are to be expected during this stage, with a dialogue-based guidance model being used.

The Data Protection Authority states that its contribution will be tailored to each individual project's needs – in terms of both scope and activities. Examples of other types of activities that may be offered in the sandbox include assisting in the performance of data protection impact assessments (DPIAs), contributing to the identification of data protection issues, providing feedback on relevant technical and legal solutions to data protection challenges, providing an arena for knowledge transfer and networking, and sharing experiences gained from the sandbox both during the process and in a final report.

What does the Data Protection Authority contribute?

Data Protection Authority employees provide guidance to sandbox participants. The Data Protection Authority's project group will include lawyers, technologists, social scientists and communication consultants – depending on the needs of each individual participant. The sandbox is not an approval mechanism, but rather a dialogue-based guidance service. The Data Protection Authority will not provide a testing platform or other technical infrastructure. The Data Protection Authority is also responsible for the preparation of a final report for the project.

Which topics does the Data Protection Authority want to highlight?

In its framework, the Data Protection Authority specifies that it wants to highlight topics that may be relevant for many actors. It is particularly interesting to highlight problems in areas where there is uncertainty concerning how to interpret and apply relevant regulations. Examples of topics the sandbox can help address include:

► innovative use of personal data with the help of technology that combines artificial intelligence with, for example, biometrics, the Internet of Things, portable technology or cloud-based products
► building a good user experience and trust by providing transparency and explainability
► how to avoid discrimination or bias

Selection criteria

The Data Protection Authority has defined some general criteria all sandbox participants must meet. In addition, selection will be based on whether the issues addressed by the project could have relevance for others, and to achieve the inclusion of a wide range of organizations. Sandbox projects must:

1. make use of artificial intelligence or otherwise involve artificial intelligence.
   Both projects developing new AI and projects using existing solutions based on AI are eligible for participation in the sandbox.
2. benefit individuals or society in general.
3. would clearly benefit from participation in the sandbox.
4. be subject to the Norwegian Data Protection Authority as its competent supervisory authority.

The framework states that in selecting projects for participation, the Data Protection Authority will attach importance to whether the project highlights relevant issues, or involves the use of technology and personal data that may be useful for other organizations. The Data Protection Authority also states that it wants to include a broad selection of participants from both the private and the public sectors, as well as both large and small organizations.

Communication

The framework states that the Data Protection Authority, in its selection of projects, will prioritize projects where the knowledge it gains in collaboration with other organizations in the sandbox can be converted into general information and advice with the potential to benefit others as well.

3.4 Selection committee and the selection of projects

Projects are selected on the basis of specific application criteria. Among other things, the projects must involve the use of artificial intelligence. Furthermore, they must have specific data protection issues they need help with, in order to make a service possible.

The sandbox selection committee consists of an internal, interdisciplinary group that conducts interviews with all applicants. An external reference group, comprising members from Innovation Norway, the Norwegian Computing Centre, the Equality and Anti-Discrimination Ombud and Tekna, will assist in assessing the public benefit of the potential projects. The final selection of projects accepted into the sandbox will be made by the steering committee, made up by the Authority's management.

3.5 Applications and completed projects in the four application rounds completed so far

The sandbox has so far had four application rounds. Table 2 below shows the application deadline for the four application rounds, the number of applicants in each round, and the distribution between applicants from the private and public sectors, respectively.

Table 2 Application deadline, applications per round, and applications per sector Source: The Norwegian Data Protection Authority.

Application round	Deadline	Applications	Applications, private sector	Applications, public sector	Projects accepted
1	15/01/2021	25	14	11	4
2	15/09/2021	21	15	6	4
3	25/03/2022	11	8	3	3
4	01/02/2023	6	4	2	2

The Data Protection Authority prepared articles/press releases for each application round, describing the number of applications, etc.[12]

In 2021, there were two application rounds. The first had a deadline in January, and the second had a deadline in September. In total, the Data Protection Authority received 46 applications, representing a wide range of sectors and data protection issues related to artificial intelligence.

In 2022, there was one application round, with a deadline in March. 11 applications were submitted.

In 2023, there has so far been one application round, with the deadline being 1 February. The Data Protection Authority received six applications in this application round.

Common themes in the applications have been transparency, fairness, bias, data minimization, anonymization and basis for processing.

The table shows that in all four application rounds, there have been more applications from the private sector than from the public sector. In total, the Data Protection Authority has received 41 applications from the private sector across four rounds, whereas it has received 22 applications from the public sector.

The number of applications has decreased over time. In 2021, the Authority received a total of 46 applications, whereas it received 11 applications in 2022.

[12] *Press releases for the different application rounds are available here: 1st round: https://www.datatilsynet.no/aktuelt/aktuelle-nyheter-2021/25-sokarar-til-sandkassa/; 2nd round: https://www.datatilsynet.no/aktuelt/aktuelle-nyheter-2021/over-20-soknader-til-sandkassa-2.0/; 3rd round: https://www.datatilsynet.no/aktuelt/aktuelle-nyheter-2022/11-sokte-pa-tredje-runde/ and 4th round: https://www.datatilsynet.no/aktuelt/aktuelle-nyheter-2023/seks-sokte-pa-sandkassa/*

In its annual report for 2022, the Data Protection Authority includes the following on the application round in March 2022: *"We received 11 applications, of which eight came from the private sector, and three came from the public sector. This is a decrease compared to previous rounds. We believe the decrease can be attributed to us being more selective about the information we put out this time, as well as being more specific on the types of projects we were looking to bring into the sandbox."*

In the application round with a deadline on 1 February 2023, six applications were submitted. The Data Protection Authority explains this relatively low number of applications by the sandbox not advertising the scheme right up until the application deadline as actively as it had done in previous rounds.[13]

Based on what we have been told by the Data Protection Authority, many of the applications in the first couple of application rounds focused on the basis[14] for processing the personal data used/intended for use in the projects, and less on topics the Data Protection Authority wanted to highlight in the sandbox. There has therefore probably also been some confusion around what a regulatory sandbox is.

We also find that the reduction in the number of applications could be due to less active marketing of the sandbox. We do not necessarily believe that the lower number of applications is a problem, provided the projects have specific issues to work on and good transfer value to other projects. We would like to point out, however, that a significant reduction in the number of applications could make it more challenging for the Data Protection Authority to achieve the objective of the sandbox being representative of a wide range of participants, from small startups to large public enterprises.

3.5.1 How was the distribution of applications by sector?

Figure 2 below shows the distribution by sector of all applications in the four application rounds. The distribution in the figure is based on the Data Protection Authority's own distribution/categorization of the applications.

From the figure, we see that the highest number of applications came from the healthcare sector, with a total of 19 applications over the four application rounds. The second-highest number of applications came from the finance sector, with 11 applications, whereas there were seven applications related to welfare. This last area includes NAV, which has submitted several applications to the sandbox.

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[13] https://www.datatilsynet.no/aktuelt/aktuelle-nyheter-2023/seks-sokte-pa-sandkassa/

[14] *All processing of personal data requires a legal basis in order to be lawful. The enterprise must therefore have identified whether or not a legal basis for processing exists before the data can be collected. If no such basis exists, the use of the personal data is unlawful. Here is a review of the different types of bases for processing and when they apply. Read more about bases for processing here:* https://www.datatilsynet.no/rettigheter-og- plikter/virksomhetenes-plikter/behandlingsgrunnlag/veileder-om-behandlingsgrunnlag/
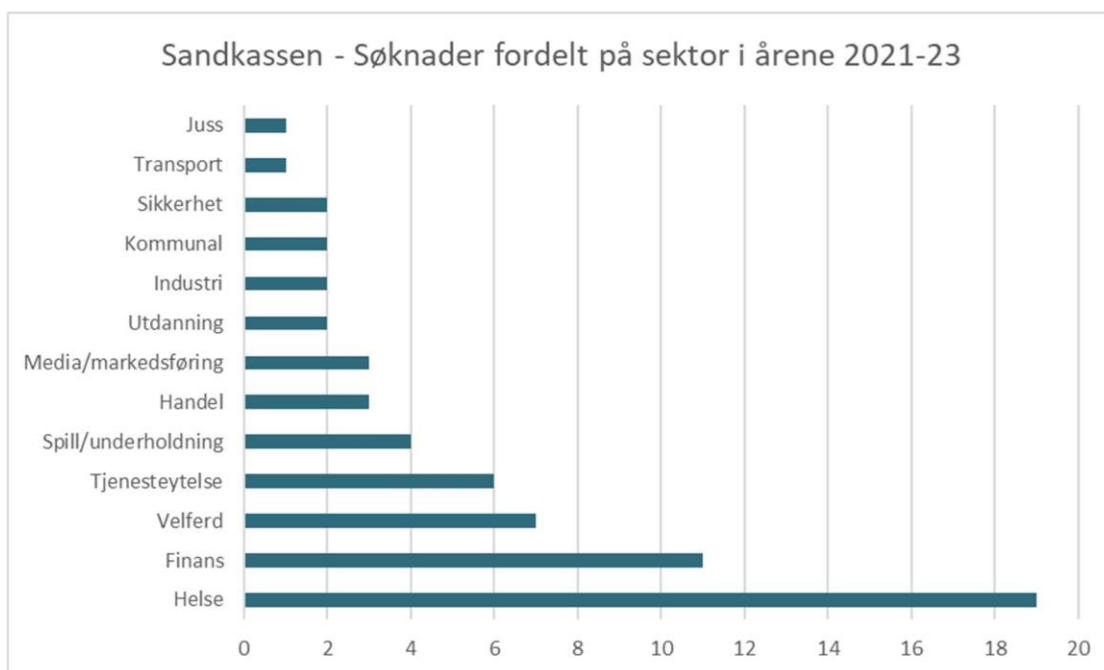
Figure 2 Applications by sector for the four application rounds, 2021–2023

In our assessment, it is not unexpected to see the highest number of applications coming from the healthcare sector. Artificial intelligence can be especially useful in the healthcare sector. The Norwegian healthcare system has access to vast quantities of health data, including personal data on patients, which can be used to train AI models capable of improving diagnostics, treatment and the prevention of disease. The finance industry, too, has access to vast quantities of personal data on customers, which can be used to train AI models capable of improving credit assessments, risk management and uncovering money laundering.

3.5.2 Completed and active sandbox projects

As of April 2023, ten sandbox projects have been completed. Since the application round that ended in February 2023, two new projects have been initiated.

The first round started in late March 2021 and included four projects:

► **Age Labs** combines machine learning and biobanks and explores epigenetics, i.e. how genes are switched off and on. With machine learning, they can find indications of disease, and the goal is to make diagnoses at an earlier stage. This project explored the potential of using AI for this purpose. The project also assessed how anonymization can make it possible to use personal data to uncover age-related disease.

► **Secure Practice** works with information security. They want to develop a service that profiles employees with regard to the cybersecurity risk they pose to their organizations. The purpose is to enable follow-up with tailored security training based on which profile categories the employees fall into.

► The **Norwegian Labour and Welfare Administration** (NAV) wishes to use machine learning to predict which users on sick leave will require follow-up two months in the future. This will help advisers make more accurate assessments, which in turn will help NAV, employers and people on sick leave to avoid unnecessary meetings. The objective of this sandbox project was to clarify the legality of using artificial intelligence (AI) in this context, and to explore how the profiling of those on sick leave can be performed in a fair and transparent manner.

► **AVT** *(Aktivitetsdata for vurdering og tilpassing)* is a Norwegian acronym for "Activity data for assessment and adaptation", and is a research and development project focused on digital learning analytics in schools. The project explores opportunities and challenges associated with the use of learning analytics and artificial intelligence to analyse pupil activity data from various digital teaching aids. Through participation in the sandbox, the AVT project seeks to explore the legal framework, in addition to accountability and ethical constraints, for the use of learning analytics in schools.

The second round started in November 2021 and included the following four participants/projects:

► **Finterai** is a Norwegian company. Banks are required to do what they can to prevent money laundering and the funding of terrorism, but struggle to do so in an effective manner. The crux of the problem is that each individual bank has "too few" criminal transactions to provide a sufficiently reliable indication of what actually distinguishes a suspicious transaction from a run-of-the-mill one. As a result, the banks' electronic surveillance systems flag far too many transactions (false positives), which trigger a time-consuming and costly manual follow-up investigation. The problem could potentially be resolved by building systems based on more data than currently exists. The challenge is that banks cannot share the necessary data among themselves, since transactions contain personal data.

► **Simplifai and NVE**. The transition from analogue to digital mail has challenged old systems for record-keeping and the archiving of mail and important documents. In the sandbox, Simplifai and the Data Protection Authority have looked into whether data protection legislation permits public administration organizations to implement machine learning to record and archive emails. In collaboration with the Norwegian Water Resources and Energy Directorate (NVE), they have explored how public bodies can make informed choices when purchasing intelligent solutions, such as DAM.

► The **Bergen Hospital Trust (BHT)** wishes to use AI to establish an automated warning system for patients with a high probability of readmission. The warning system is intended to help clinicians identify patients who require additional follow-up to avoid being readmitted to hospital after a short period of time. The objective of the sandbox project was to clarify the legal position regarding the use of AI and to explore how patients' rights may be protected.

The third round started in March 2022 and included the following participants and projects:

► **Akershus Hospital (Ahus).** The goal of this sandbox project has been to explore the concepts of "fairness" and "algorithmic bias" in a specific health project, EKG AI.
Ahus is developing an algorithm for predicting the risk of heart failure in patients. In time, it will be used as a decision-support tool to enable health personnel to provide better and more effective treatment and follow-up of patients. This sandbox project has discussed the possibility of bias in EKG AI, as well as potential measures to prevent discrimination.

► **Ruter**, a provider of public transport services in the Greater Oslo area, has participated in the Norwegian Data Protection Authority's sandbox in connection with its plans to use AI in its app. In the sandbox project, the Authority and Ruter have discussed how the company can be open about the processing of personal data that will take place in this solution, including about the purpose of processing. A particularly interesting issue relates to how clearly one must delimit in advance the purposes for which the data will be processed. After all, artificial intelligence's strength is to discover new connections and possibilities.

► **Doorkeeper** aims to strengthen data protection in modern CCTV surveillance systems. They want to achieve this by using intelligent video analytics to censor identifying information – such as faces and human shapes – in the video feed. They also want to ensure fewer recordings are saved, compared to more traditional surveillance systems. The purpose of this sandbox project has been to explore some of the most salient regulatory challenges that arise in connection with the use of intelligent video analytics.

The round that started in March 2023 includes two projects:

► **PrevBOT** is a collaboration between the Norwegian Police University College and the University of Agder. It is a concept for a tool for patrolling open social media, with the aim of preventing child sexual abuse. The AI-based bot must be able to identify behaviour that indicates a risk of sexual abuse, and it must be able to point out social arenas that are worth paying extra attention to. It must be able to identify grooming conversations via language analysis, and it must be able to predict the age and gender of those involved.

► **Mobai** is a startup that wants to develop privacy-friendly facial recognition. Data protection authorities believe that facial recognition – and especially facial recognition in combination with AI-based analysis – is a demanding and challenging topic involving a high risk.

3.6 Externally-directed activities

We have been provided with information about externally-directed activities (marketing and communication activities) have have been carried out in relation to the sandbox, such as newsletters, podcasts, seminars and final project reports. Appendix B provides an overview of externally-directed activities in the period October 2020–March 2023. Below is a summary of activities and actions related to marketing and communication.

Sandbox web pages. The Data Protection Authority has created a dedicated website section for content related to the sandbox. This section includes news, information about the framework, tips, application forms, final reports and other relevant material. In addition, the sandbox has an English-language section and publishes reports translated into English.

Final reports. The Data Protection Authority prepares final reports for all completed sandbox projects.

SandKasten. The Data Protection Authority has a dedicated podcast on the sandbox, called SandKasten. This podcast highlights insights from the different sandbox projects. In addition, a few episodes of the Data Protection Authority's other podcast, Personvernpodden, have also covered the sandbox. As of April 2023, 14 episodes of Personvernpodden have been dedicated to the sandbox[15], including eight episodes of SandKasten. The Data Protection Authority included the following on the podcast in its annual report for 2021: *"Our podcast is, much like our blog, Personvernbloggen, a channel where we can discuss other topics and issues than we do in a lot of our other external communication and in our ordinary administrative activities. The podcast aims to engage both new and existing target groups, and to raise awareness of and invite reflection around data protection in the population."*[16]

News articles on datatilsynet.no. In the period from October 2020 through March 2021, there were 31 online articles under "News" on datatilsynet.no relating to the sandbox.[17]

Newsletter. As of March 2023, 22 sandbox newsletters have been distributed. The newsletters include invitations and information about application deadlines, meetings, webinars and events relevant for anyone who is interested in new, responsible artificial intelligence. The number of recipients of sandbox newsletters has increased, from 115 in August 2021, to 591 for the newsletter sent out on 24 March 2023.

Events. The Data Protection Authority has organized and participated in a number of events where the sandbox has been discussed. The overview in Appendix B shows 17 events, but this overview is probably not complete.

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[15] https://www.datatilsynet.no/regelverk-og-verktoy/personvernpodden/

[16] https://www.datatilsynet.no/om-datatilsynet/arsmeldinger/arsrapport-for-2021/

[17] https://www.datatilsynet.no/aktuelt/

Editorial coverage. The sandbox has had several mentions in the media. Data Protection Authority employees have written opinion pieces and other articles, but there have also been articles based on press releases from the Data Protection Authority.

Appendix B provides an overview of externally-directed activities. The figures for events and editorial coverage are probably not complete, but they provide an indication of the level of activity throughout the period.

Transparency Report. In January 2023, the Data Protection Authority published an experience-based report on how to communicate when using artificial intelligence. This report covers central legal requirements for transparency in the use of artificial intelligence and presents three relevant projects from the Data Protection Authority's regulatory sandbox. The report also included a checklist for transparency in artificial intelligence.
In the news article about this report, the Data Protection Authority writes:

> The Transparency Report is the first from the sandbox, apart from final reports from the individual projects. In the first two years, we have focused on building a database of cases, while also strengthening our internal expertise on the field and method. As we complete our tenth project at year's end, we have obtained a great deal of knowledge we would like others to benefit from. We will emphasize making this knowledge available to those who need it.[18]

There have also been other externally-directed activities since the beginning in 2021.

Among other things, the Data Protection Authority has established a collaboration with Digital Norway, developing an e-learning programme on the basis for processing personal data. This has been a recurring theme in applications to the sandbox.

There have also been coordination meetings with the National Archives of Norway and the Financial Supervisory Authority of Norway, which also have sandboxes for their sectors. The Data Protection Authority is also part of a European sandbox network, which includes, among others, the British ICO and French CNIL.

Furthermore, the Data Protection Authority has met with authorities in several countries that are interested in hearing about the Norwegian sandbox.

3.7 The sandbox is made permanent

In the allocation letter to the Data Protection Authority in 2023, funds were made available for the operation of a permanent regulatory sandbox for data protection-friendly innovation and digitalization. The sandbox's mandate is thereby expanded to include guidance on the development of innovative and data protection-friendly technological solutions, and is no longer limited to solutions involving artificial intelligence:

Regulatory sandbox for data protection-friendly innovation and digitalisation

Data protection legislation is complicated, and many find compliance to be a struggle. Violations are subject to severe sanctions. Many hesitate to take advantage of the potential leeway provided by the General Data Protection Regulation (GDPR) and Personal Data Act for fear of violating their provisions and being met with severe sanctions. This could impede the development of new services that use personal data. To facilitate for the development of innovative solutions that use personal data in a safe and lawful manner, funds have been made available to the Data Protection Authority for permanent operation of a regulatory sandbox for data protection-friendly innovation and digitalization. In this sandbox, public and private enterprises can obtain guidance in the development of innovative and data protection-friendly technological solutions.[19]

[18] https://www.datatilsynet.no/aktuelt/aktuelle-nyheter-2022/hva-skal-du-si-om-bruk-av-ki/

[19] Ministry of Local Government and Regional Development (2023). Allocation letter 2023 and revised remit – Data Protection Authority.
06/01/2023 Section 3.1.

4 Organization of the sandbox – findings and assessments

This chapter focuses on the organization of the sandbox and how its activities further the objectives of the initiative. This includes whether the implementation of the sandbox is in line with the expectations of the appropriating ministries. We also consider whether the Data Protection Authority has worked in an appropriate manner to achieve the goals it has defined for the initiative.

In chapter 3, we looked into the background for the sandbox, the initiative's objectives, its overall framework and how the sandbox was executed. In this chapter, we look more closely into how the sandbox has been implemented, and whether its execution furthers its objectives. The two evaluation questions we explore in this chapter are:

► Has the Data Protection Authority's sandbox worked as intended in light of the objectives defined by the appropriating ministries?

► Has the Data Protection Authority's work been appropriate in relation to its own defined goals?

For each of the two questions, we first look at the actual execution, before we consider the assessments of the people we interviewed. Finally, we provide our assessments on the evaluation questions.

4.1 Has the Data Protection Authority's sandbox worked as intended in light of the objectives defined by the appropriating ministries?

4.1.1 Sandbox funding and expectations defined in allocation letters

The sandbox is funded by grants from a number of government ministries. Table 3 below provides an overview of the funding by year and ministry in the period 2020–2022.

Table 3 Overview of sandbox funding. Figures in NOK million. Sources: Allocation letter to the Data Protection Authority.[20]

	2020	2021	2022
Ministry of Local Government and Regional Development (Ministry of Local Government and Modernisation in 2020–2021)	3.0	4.0	4.0
Ministry of Labour and Social Inclusion (Ministry of Labour and Social Affairs in 2021)		1.0	1.2
Ministry of Health and Care Services		1.0	1.0
Ministry of Education and Research		1.0	1.0
Ministry of Trade, Industry and Fisheries		1.0	1.0
Ministry of Transport		1.0	1.0
TOTAL	**3.0**	**9.0**	**9.2**

20 https://www.regjeringen.no/no/dokument/dep/kdd/tildelingsbrev-arsrapporter-og-instrukser--kommunal--og-moderniseringsdepartementet/id522666/?expand=factbox2543208

As shown in chapter 3, the sandbox was established as part of the National Strategy for Artificial Intelligence from January 2020. The strategy also outlined the purpose of the sandbox. This was also described in chapter 3.

The allocation letters from the Ministry of Local Government and Regional Development (formerly the Ministry of Local Government and Modernisation)[21] to the Data Protection Authority do not point to specific expectations for the sandbox, beyond the sandbox providing opportunities for public and private enterprises to seek guidance on the development of innovative and data protection-friendly technological solutions. It was largely left up to the Data Protection Authority to operationalize these expectations in the development of the sandbox and in the marketing of it. The Data Protection Authority has a duty to report on sandbox activities, including in its annual report:

► Number of projects and type of projects accepted
► Justification for choice of projects, or for projects that were not included
► Expected benefit for the enterprise, society and the Data Protection Authority
► Estimated resource use for each project

4.1.2 Findings

In interviews with a selection of representatives for the government ministries that have provided funding for the sandbox, we learned that it was a conscious decision not to put specific instructions in place for how the Data Protection Authority should develop and implement the sandbox. The Data Protection Authority should be able to manage its responsibilities without interference from the ministries or other political bodies. This means that it must be independent and unaffected by political agendas and priorities. Independence is a key factor in ensuring that the Data Protection Authority is able to do its job impartially and objectively, and in protecting the rights and privacy of citizens.

The ministries knew little about the sandbox approach, and therefore had no specific expectations with respect to it. As the sandbox became active, it was easier to visualize its potential. Through the projects, the potential leeway provided by data protection legislation has been explored in a way that benefits all those with an interest in the field. This includes both public sector and commercial actors. The sandbox is considered to be a good supplement to the traditional supervisory role of the Data Protection Authority. There is more active guidance, and sandbox participants have a greater opportunity to explore the extent of the leeway provided by legislation than they have if the only response they receive is after a supervisory inspection. The sandbox is therefore perceived as promoting innovation and development in both the public and the private sector.

The experience is that the Data Protection Authority has provided good information about its experiences with the sandbox projects. The benefits for participating enterprises and other partners seem to have been well documented.

At the same time, some of the informants are unsure of the transfer value beyond the benefits to participants. Are the results widely disseminated, and do they reach those who may benefit from them?

Respondents also note that participation in the sandbox should not provide a competitive advantage. That is why all results must be published, thereby making them freely available. The Data Protection Authority does not grant any form of approval.

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[21]*Allocation letter 2020 – addendum 2:*
https://www.regjeringen.no/contentassets/5e8becb098da42488ef31196759fc81a/2020_tildelingsbrev---tillegg- 21191427.pdf
Allocation letter 2021:
https://www.regjeringen.no/contentassets/5e8becb098da42488ef31196759fc81a/2021_tildelingsbrev- datatilsynet-.pdf
Allocation letter 2022:
https://www.regjeringen.no/contentassets/5e8becb098da42488ef31196759fc81a/2022_tildelingsbrev-2022- datatilsynet1498250.pdf

The participants are themselves responsible, in accordance with the GDPR. On the other hand, one could imagine that participants recognize the benefit of participating in the sandbox, as it provides unique access to guidance from the Data Protection Authority.

Most of the ministries that provided funding for the sandbox initially remain on board now that the sandbox has been made permanent. The sandbox being made permanent is considered to be a good thing. Permanent operation is seen as helping to raising awareness of security and verifiability in the digital field. Respondents from the ministries also take a positive view of the sandbox's new mandate and of the scope being expanded to include data protection-friendly innovation and digitalization.

4.1.3 Our assessments

The ministries providing funding placed minimal restrictions on the Data Protection Authority in the development and implementation of the sandbox. The main condition was that the sandbox should provide opportunities for public and private enterprises to seek guidance on the development of innovative and data protection-friendly technological solutions. Seeing as the Data Protection Authority is a supervisory authority, and therefore has an especially independent status, the ministries did not want to be too detailed in its management. They were also not very familiar with the sandbox method, and believed that the Data Protection Authority itself had to determine the most appropriate design for the sandbox.

Respondents from the ministries were generally very happy with the way the Data Protection Authority has executed the sandbox project. The project reports are perceived to be of good quality.

Most ministries that had been involved from the pilot project wanted to continue being a source of funding. They take a positive view of expanding the scope of the sandbox to include data protection-friendly innovation and digitalization now that it is being made permanent. We do not have any information on what this expansion of its mandate will entail in practice.

On this basis, we find that the Data Protection Authority's implementation of the sandbox is in line with the ministries' conditions and expectations for this project.

4.2 Has the Data Protection Authority's work been appropriate in relation to its own defined goals?

4.2.1 More on how the Data Protection Authority works with the sandbox

The overall objective for the establishment of the sandbox has been to promote innovation of ethical and responsible artificial intelligence from a data protection perspective. In chapter 3, we looked more closely at the objectives for the establishment of the sandbox. This review showed that the goal is for the sandbox to produce benefits for organizations, the Data Protection Authority, individuals and society in general. The question is the degree to which the Data Protection Authority's implementation of the sandbox has contributed to the attainment of these objectives in an effective manner.

The inspiration for the sandbox is the British Information Commissioner's Office's regulatory sandbox for organizations developing products and services that use personal data. See the fact box in chapter 3.2 for more information about this sandbox. Many of the methods used in the Data Protection Authority's sandbox are based on the British regulatory sandbox.

The development of the Data Protection Authority's sandbox was undertaken in several stages. The sandbox first went through a development stage, establishing the sandbox. This included appointment of a start-up team, project managers and deputies; preparation of a project mandate, application criteria, application and selection processes, "contracts/expectation documents", and project and working methods; promotion of the project externally; and building support internally.

Then, the sandbox transitioned to an operating stage, which included the promotion of new application rounds, execution of application processes, selection of projects, planning and execution of projects, reporting, preparation of guidance materials, and experience transfers to the line organization.

The project method developed is described as a type of *dialogue-based guidance*. First, participants agree on which topics to focus on in the process. Then, workshops are organized on the agreed topics. Work on the report is started, and the report is finalized once all planned activities have been completed. Then, the Data Protection Authority performs an approval process, including input from the sandbox reference group.

The four sandbox application rounds completed so far are described in chapter 3.5.

4.2.2 Findings

We have explored how project participants experience the sandbox process, from finding out about the sandbox to submitting an application to the completed project.

The application process

The reasons for applying to participate in the sandbox vary. Some respondents applied in response to invitations or other promotions from the Data Protection Authority, others after other types of communication with the Data Protection Authority, where they were either provided with information about the sandbox or encouraged to apply. Others heard about the sandbox through their networks.

The application process itself, developed by the Data Protection Authority, gets a positive review by our respondents. There were some clear criteria that had to be met in the application. These criteria were in part derived from the objectives for the sandbox. Applicants we spoke to found that the criteria gave a clear signal as to the types of projects the sandbox was looking for. It wanted AI projects with a clear public utility, but where the applicant had questions or problems it could be useful to work out within the framework of the sandbox method. It was pointed out that if potential applicants found the criteria difficult to understand, this could indicate that the project was not a good fit for the sandbox.

All project participants we interviewed found the application process, which has two steps, to work well. There is an initial round with a relatively low demand for resources, where one could clarify whether the project was a good fit for the sandbox. Then, there was a more thorough round, where one, in dialogue with the Data Protection Authority, could specify or develop the project further. Finally, the Data Protection Authority assessed the applications and decided which projects to include in the sandbox.

Project execution

Several respondents from projects that participated in the first sandbox round found that the Data Protection Authority had not yet fully developed the concept for the initiative. They found that the process and methods were often developed as a collaboration between the projects and the Data Protection Authority, in a fashion that very much took a "learning by doing" approach. As a result, the views on project execution therefore differ slightly. In some projects, workshop dialogue played a major role in the outcome of the project, whereas in others, the method was characterized more by an exchange of written text proposals. In these projects, workshops were used more to present various findings. In projects where workshops played a major role, respondents would have preferred more opportunities to interact between workshops. In cases where the work was largely written and prepared outside of workshops, respondents would have liked more discussion during workshops. In projects completed in subsequent rounds, this is no longer a major focus. It would seem that a more uniform method had been developed by then.

Experiences with project execution are generally positive. The Data Protection Authority's representatives in the projects were seen as accommodating, involved and genuinely keen to contribute to a good project outcome. The distribution of responsibilities between the parties was clear, while retaining enough flexibility to adjust in response to emerging needs as the project evolved.

Some respondents pointed out that the sandbox also became heavily focused on the legal aspect. They also indicated a preference for more attention to be paid to the technological aspect and for the Data Protection Authority to contribute more technological expertise in this area.

Time spent

Most of our respondents find that the time spent on the projects and project durations were appropriate, given the issues being explored. Several projects took longer than originally planned. This additional time invested in the project was considered useful, however. Respondents found it gave an added benefit in the form of better project results.

One aspect pointed out by several of our respondents is that the Data Protection Authority took a long time to approve the final report after it had been submitted. Respondents within the Data Protection Authority also point out that there is potential for improvement in this area. Among other things, the report must be reviewed by the reference group. It has also taken time for the Data Protection Authority to assess the report.

4.2.3 Our assessments

In our opinion, the Data Protection Authority has implemented the sandbox in such a way that its objectives are attained. Both the application process and the way it is executed support the objectives of providing benefits for the organization, the Data Protection Authority and individuals/society in general. We would still like to note some issues related to sandbox establishment and execution, based on feedback and suggestions from participants in sandbox projects.

Early participants in the sandbox also found that the Data Protection Authority did not have a clear vision for how projects should be executed within the initiative. They had expected methods and execution plans to be more complete when they were accepted into the sandbox. At the same time, the Data Protection Authority is clear that the sandbox was an experiment, and that it did not have everything ready in terms of project execution. The framework around the sandbox was ready, but the methods for execution were not. That is also why the initial projects were considered processes for developing the methods used in the sandbox. It is our assessment that the Data Protection Authority could have more clearly communicated the development aspect in this initial stage of the sandbox.

The sandbox is primarily designed to address the legal aspects of the use of artificial intelligence. The Data Protection Authority has limited technological expertise. The sandbox was therefore not able to match the expertise some projects brought in on the more technical aspects of the use of artificial intelligence. For projects that did not have the necessary technological expertise in-house, the Data Protection Authority was unable to provide satisfactory guidance. The Data Protection Authority should consider whether to strengthen the technological expertise available within the sandbox, to enable it to provide a more comprehensive perspective on the use of digital technology.

The time spent on sandbox projects appears to have largely been necessary and appropriate. At the same time, both project participants and the Data Protection Authority itself agree that the process to approve final project reports has taken too long. The Data Protection Authority should therefore seek to reduce the time spent on this stage of the process.

5 Effects of the sandbox – findings and assessments

One of the goals of the sandbox is to promote the development of innovative artificial intelligence solutions that, from a data protection perspective, are both ethical and responsible. In order to achieve the goals of a public initiative, it is essential to reach the intended target groups. The focus of this chapter is how well the sandbox has been able to reach its target groups, whether the initiative is considered relevant based on the needs of the target groups, and what effects the initiative has had.

In the previous chapter (chapter 4), we focused on the evaluation questions that concern how the sandbox is organized. In this chapter, we look more closely into the effects of the sandbox, i.e. how the Data Protection Authority has reached and communicated with its target audience, and what the effects of the sandbox have been so far. The evaluation questions we focus on in this chapter are:

► Has the Data Protection Authority reached the relevant target groups for the measures?
► How successful has communication to and dialogue with target groups been?
► Which specific benefits has the sandbox provided, both internally and externally?
► How do the target groups perceive the effects of sandbox activities based on their own needs?
► How does the Data Protection Authority internally perceive the effect of sandbox activities?

5.1 Has the Data Protection Authority reached the relevant target groups for the measures?

5.1.1 A number of communication activities to reach different target groups

Creating benefits for other enterprises beyond those actually participating, is an important goal for the sandbox. The Data Protection Authority creates examples and guidance materials based on lessons learned from the sandbox. All projects practise transparency by publishing project plans and final reports on the Data Protection Authority website. These materials should be useful for anyone with an interest in developing ethical and responsible artificial intelligence.

Various communication activities, tailored to different readerships and levels of expertise, have been undertaken. See chapter 3.6 for more information about these activities.

5.1.2 Findings

The Data Protection Authority itself is conscious of the fact that the dissemination of information to relevant enterprises is a success criterion for the sandbox. In interviews with Data Protection Authority employees, respondents point out that success in this area is essential, to prevent a situation where the Authority, in practice, provides a free consulting service.

In interviews with project participants, all respondents said that they understood that project results would be disseminated to and used by others. Several respondents say they find that the Data Protection Authority actively works across multiple channels to communicate insights from the projects. Many also say that they have personally made themselves available for webinars, podcasts and other communication activities, but that there were no specific requirements to provide such availability once the project was completed. Several respondents from private enterprises say they want to participate in communication activities, because this is seen as a positive thing to do, while providing publicity for their projects at the same time.

In interviews with Data Protection Authority employees, we learned that very little focus goes into measuring the effect of sandbox-related communication activities. This means that the Data Protection Authority only to a limited degree analyses user activity on its website, to learn which target groups each communication activity actually reaches. Several project respondents say it is difficult to determine whether the communication activities actually reach anyone. Several respondents, both project participants and external experts, suggest that the sandbox collaborate with others to reach specific communities or sectors or "domains". This could, for example, include KS for the municipal sector, Digital Norway for small enterprises, etc.

In interviews with external experts, several respondents point out that the results do not travel far enough. One asserts that despite working on relevant topics and staying informed of what the Data Protection Authority does, they have not seen enough about the sandbox results. Another external expert points out that the sandbox has taken a broad perspective in its communication activities, and that it has tried to be inclusive. This respondent considers that more people should have been reached, but that to do so would require the sandbox to have sufficient funds in its budget.

Reaching key (legal) communities in the field of data protection
The newsletter for the sandbox has seen an increasing number of subscribers, from just over 100 to approx. 600 recipients. The podcast generally reaches anywhere between 600 and 800 listeners. One external expert says the newsletter and podcast are good. Several external experts say that, while they do not have a full overview of the audience the sandbox reaches, their impression is that the communication largely "preaches to the converted".

Limited contact with communities at universities and university colleges
Several external experts point out that research and student communities in the higher education sector are a group the sandbox is not reaching. IT students and relevant research communities that want access to data, and facilitate data flows, could greatly benefit if the sandbox had a higher profile among them. One respondent believes the sandbox should give guest lectures in academic programmes that cover AI.

Another respondent points out that the R&D communities drive the development of AI and are extremely influential in the advances being made. In addition, they collaborate with commercial enterprises and educate students. Targeted activities aimed at these communities should therefore be developed. Several external experts suggest that the sandbox organize activities aimed at universities and university colleges, so that they can stay better informed. One respondent points out that engagement with sandbox activities will probably not be "automatic".

Difficult to reach large technology development communities
Respondents point out that large enterprises have dedicated departments working on AI projects, and that they would benefit from learning more. Several external experts point out that it can be difficult to recruit some of these enterprises, major tech companies know little about data protection. The respondent points to the fact that working with personal data feels daunting, and that there is a tendency to become defensive and be reluctant to engage in this area, instead of actively attempting to understand the room for manoeuvre available.

Another respondent says they believe many primarily consider the GDPR to be an obstacle. The respondent says that some adult education is needed for anyone involved in data-driven business activities, to help them learn more and realize what benefits the GDPR affords and how they can be exploited.

Potential to better reach public enterprises involved in regulatory development
A small number of respondents who have completed sandbox projects point to specific effects related to regulatory development. In one project, the algorithm developed did not have sufficient basis in law, and the project participant was personally able to assume responsibility for the need for regulatory

development. Dialogue with the Data Protection Authority has made the need for regulatory development clear internally.

Another respondent from one of the projects points out that the Data Protection Authority, in the wake of the project, provided feedback on a statutory regulation. Both in the regulatory and in the legal area, the sandbox has uncovered new elements that have been used, providing legislators with feedback on what can be done.

One external expert says that sector-specific regulations that are not part of the data protection legislation can limit what is possible in certain projects. They know of a project that was cancelled, because it concerned regulations administered by another government ministry, and thus fell beyond the remit of the Data Protection Authority. The respondent suggests that in order for projects to contribute to regulatory development beyond the regulatory framework under the remit of the Data Protection Authority, the Authority could establish a dialogue with the relevant administrative body. This could be done both at the beginning of the project, and by forwarding the final reports to the administrative body in question.

5.1.3 Our assessments

There are two aspects to reaching target groups: First, the Data Protection Authority should improve enterprises' understanding of regulatory requirements, as well as of how AI can comply with such requirements in practice. The sandbox should meet the learning requirements of enterprises that are not participants in the sandbox. In order to improve the effect of sandbox projects, insights and experiences should therefore be disseminated to others, and not be limited to their participants. Second, the Data Protection Authority should reach potential applicants for sandbox projects, so that the sandbox receives a sufficiently wide variety of applications to select from.

The dissemination of knowledge derived from the use of public funds is defined as a goal in Meld. St. 30 (2019–2020) An innovative public sector.[22] This is particularly relevant for the type of initiatives that facilitate experimentation and innovation, like the sandbox.

There is considerable communication work going on in a wide range of channels, formats and levels. We find that the Data Protection Authority has reached major target groups, but that it could benefit from prioritizing some of them. The respondents we talked to have a positive impression of the communication activities related to the sandbox, but find that it is difficult for the sandbox to communicate a complicated message to those outside the "converted".

Universities and university colleges seem to be a target group not sufficiently reached. These communities have two functions that are especially relevant for sandbox activities. First, they have communities that are at the forefront of the field, and that help shape the future of AI development in Norway. Several of these communities have considerable communication resources of their own, which may benefit the sandbox. Second, they educate students who, in just a few years, will take part in the development of artificial intelligence. Reaching students could be a way to create long-term effects from the sandbox, both through insights into the field and by the students bringing knowledge of the sandbox with them when they start their careers and come into contact with new enterprises.

Some technology enterprises also stand out because they may be holding back due to a desired to avoid costly mistakes. This is especially true for small and medium-sized businesses, but it could also be relevant for large enterprises. Large tech companies will probably play a major role in the development of artificial intelligence in Norway. Several external experts point out that this target group may be difficult to reach due to the risk these enterprises believe is associated with implementing artificial intelligence that uses personal data. The Data Protection Authority should consider establishing a dialogue with both large and small technology development communities, to seek feedback on how they may benefit from the sandbox.

Several findings suggest that many individual sectors are unfamiliar with the sandbox. These include the municipal sector, the education sector and regional industrial clusters. If the Data Protection Authority were to establish more direct collaboration with these communities, they could also help in the spread of information, such as guidance materials and application deadlines. One possibility could be to test out communication by collaborating with clusters administered by Innovation Norway.

Clusters working on artificial intelligence could be especially relevant. A collaboration with KS or selected municipal networks could also increase the sandbox's reach.

At the same time, the Data Protection Authority's annual reports show that 30 presentations at various conferences have been given. These types of activities are highly resource-intensive. One option could be to target these activities in order to better reach the communities that do not currently seek out or monitor sandbox activities. Generally, measuring user activity on sandbox-related channels could provide a better foundation for tailored external communication activities.

5.2 How successful has communication to and dialogue with target groups been?

5.2.1 A wide range of communication activities to reach target groups

Where chapter 5.1 focused on whether the Data Protection Authority had reached relevant target groups, this question focuses on how successful communication with target groups has been. On the one hand, communication should serve to highlight the regulatory sandbox initiative. On the other hand, communication and dialogue with target groups should be handled in such a way that it contributes to the dissemination of useful insights to enterprises involved working on AI-related issues.

As described in chapter 3.5, the sandbox has made use of a wide range of communication activities since its establishment. The formats the sandbox has used include online news articles, editorial coverage, podcasts, newsletters and events. Appendix B provides an overview of specific activities. In addition, there is a "sandbox section" on the Data Protection Authority website. The sandbox section serves as a portal to the sandbox, with information and guidance for applicants. The section also publishes project reports, which form a key element in the more in-depth communication of project outcomes to target groups.

5.2.2 Findings

The sandbox has a dedicated resource working exclusively on communication related to the sandbox, including dissemination of project insights. This contributes to a high level of activity, and content is being produced in a wide range of communication channels and formats.

Several respondents point out that having a sandbox portal is inherently good, and that a lot of the information on this portal is useful. In interviews, several external experts point out that they have the impression that visibility is primarily good for the "converted", i.e. those who already follow the Data Protection Authority and are interested in the topic.

The sandbox contributes to a number of events, as well as various publications, such as Digi.no, Dagens Næringsliv and Computerworld. We have not found any communication in types of media that go deeper into the subject matter, such as scientific journals.

One respondent points out that the communication activities maintain a very high quality and that they use clear language, which means they communicate in a way that people can understand. The respondent believes that the communication can be useful for smaller enterprises and startups with relatively limited resources compared to large tech companies.

Several external respondents question whether lessons from the projects reach far enough. One external expert points out that in order to achieve the goal of disseminating relevant information about each project, communication activities relating to individual projects or individual topics should be made findable/retrievable. Currently, there is no easy way to enter a particular project to find out whether there has been any communication about the project.

Structure of exit reports

In interviews with Data Protection Authority employees, we learned that the primary purpose of final project reports is to document conclusions that may be beneficial for others. The main target group for these reports is those with some expertise in the field of artificial intelligence. We have asked both technological and legal experts to review the final reports. From a technological perspective, there is considerable variation in terms of the lessons that may be learned from the reports. Some of the reports provide robust insights and clearly communicate what to keep in mind when developing AI. Other reports are more descriptive in nature and stay more on the surface of the issue. Those who may benefit from the projects in a professional context may therefore find these final reports less useful than they might have been From a legal perspective, it is pointed out that the reports only to a limited degree include references to sources in the form of practices or guidance from the European Data Protection Board and other supervisory authorities. This could have provided clarity on how assessments in the individual sandbox projects relate to practices or existing guidance.

Making the sandbox conclusions accessible

In interviews with the Data Protection Authority, it is pointed out that final reports are not the primary channel for in-depth communication on sandbox-related topics, but that other channels for such communication should be used. At the same time as this evaluation was being prepared (in January 2023), the Data Protection Authority published a report on the topic of algorithm transparency ("Transparency Report"). Several respondents point out that this type of report is beneficial. They would like the Data Protection Authority to collect and analyse information on different topics from the projects and publish their findings.

Project summaries can also be presented in other ways. For example, the different issues discussed in the various sandbox projects could be grouped under relevant headings for the purpose of comparison

Projects too narrow?

Some of the external experts say they do not hear enough about the results. One suggested reason for this is that the projects are fairly narrow in scope. One example given in this context is a project on the prediction of heart attacks. It is pointed out that this is narrow, highly technical and somewhat inaccessible for anyone who does not work in this field. Respondents suggest that it is essential to find broad and good projects, in combination with making sure information about them is disseminated widely.

5.2.3 Our assessments

The sandbox engages in widespread communication activities. Much of this activity works well as information dissemination in a popular science perspective. Spreading awareness of the sandbox and its general area of focus is a central goal, and a great deal of the communication effort is devoted to this objective. In our assessment, the dissemination of knowledge and insights gained from the projects could be expanded, i.e. the sandbox should disseminate more specific information that could be useful for lawyers, technology specialists and anyone else in the AI field.

Several of the communication activities, including project presentations, could discuss the issues in greater technical depth. The reports have been written to reach target groups that are difficult for the sandbox to connect with. With more in-depth technical descriptions, the reports may become more interesting for a technically aware readership. These more detailed reports can be prepared as additions to the final project reports in the current structure, so that it is possible to access reports at two levels, and the reports could be aimed at different target groups.

Given that there are currently limitations in the sandbox mandate, one option could be for the Data Protection Authority to bring in third parties from academia or other research communities to help with dissemination. Such communication activities should come in addition to the current dissemination effort. The sandbox should consider being more present on LinkedIn, as this is a platform used extensively in tech circles.

Based on findings from external experts, more technical briefing papers should be prepared on the issues explored in sandbox projects. The Transparency Report is a good example of this type of briefing paper, more of which are needed. It is our understanding that it would be possible to produce additional technical briefing papers based on the projects completed since the sandbox was established. At the same time, it is important to keep in mind that this initiative has only been operating for a short time, and that it may not be practical to prepare such briefing papers until more projects on the same topic have been completed. It could therefore be said that, on the whole, the production of such reports will only be possible in the future, when the sandbox has developed enough insight. It is likely that more sandboxes will be established in both Norway and the EU in the years to come, not least because sandboxes are one of the tools included in the EU's proposed AI Act. It could therefore also be useful to refer to examples from other sandboxes, where relevant.

Independent of this, steps can be taken in the sandbox itself to make it easier to discover which topics repeat across multiple sandbox projects. This could, for example, be achieved by tagging projects with similar challenges, so that visitors quickly could gain a more general perspective on the issues. As the number of sandbox project increases, artificial intelligence can also be used to find the right report, based on the type of problem the visitor is working on. In combination with more detailed reports, someone whose work involves the practical development of AI could make better use of these assessments.

Currently, final project reports include limited references to sources in the form of practices or guidance from the European Data Protection Board and other supervisory authorities. This could have provided clarity on how assessments in the individual sandbox projects relate to practices or existing guidance.

In order for enterprises to implement new insights on artificial intelligence and data protection, there must be a sufficiently strong link between what the enterprise already knows and new, external insights. We can say that sandbox information must be directed at, and reach, enterprises "where they are" in terms of knowledge, by generating and disseminating relevant knowledge. As mentioned above, we find that including more technical information could make reports more interesting for a technically aware readership. As long as the purpose of the sandbox is innovation in the field of artificial intelligence, the dissemination of sandbox insights should reach target groups in such a way that it is likely that the enterprises concerned will use this information in their own technological developments.

5.3 Which specific benefits has the sandbox provided, both internally and externally?

5.3.1 The sandbox should generate a broad spectrum of benefits, both internally and externally

The overall goal of the sandbox has been to promote innovation of ethical and responsible artificial intelligence in compliance with data protection legislation.

For the Data Protection Authority, the sandbox should yield benefits in the form of increased understanding and knowledge of new technological solutions. The sandbox should also improve the Data Protection Authority's competence with regard to AI, business development, innovation and regulatory interpretation in the context of AI solution development (Project mandate, stage 2, operation).

Enterprises that bring their projects to the sandbox should be able to test and develop AI solutions in a "safe harbour", in that they, in consultation with Data Protection Authority employees, discover vulnerabilities and weaknesses at an early stage. For the individual project participants, the benefits should consist of an increased understanding of regulatory requirements and how data protection legislation applies to the enterprise's business model, products and services. Improved knowledge of regulatory requirements and data protection legislation should provide the enterprise with the opportunity to make changes early on in a developmental process, to ensure that the solution complies with relevant regulations.

5.3.2 Findings

Most of the project participants interviewed say that the experience met their professional needs Several of the respondents say that it has been very valuable to have a critical sparring partner.

Specific project benefits

All respondents who participated in projects describe the professional benefits as good and meeting their needs. First, they find it positive to have a very specific question they wanted answered, and that the answer came in the form of concrete outputs and methods. Several emphasize the benefit of mapping and developments related to data protection impact assessments (DPIAs). One respondent from a large enterprise that participated says they knew the project was ambitious from the start, and they managed to complete 80–90 per cent of it, which is fine. The respondent emphasizes that the thorough legal assessment would be very valuable for others working on this topic. Several of the participants from smaller organizations speak very highly of benefits related to the legal assessments of the technology they are developing. One respondent says that without these clarifications, it would be extremely risky to develop a product within what is a regulatory grey area.

In interviews with project participants, several emphasize that the role of the Data Protection Authority as a critical sparring partner was very valuable. When working on AI development, there is a risk of becoming blind to what is possible. In such chases, it is very useful to be challenged by someone asking "Why are you thinking X instead of Y?". One respondent from a project says that one of the major benefits was learning how to think about technology in a responsible way. This has boosted their confidence in their continued work on AI. In connection with discussions about explainability, one respondent gives the example that having to give a detailed explanation of what the technology does to both administrators and end users was a wake-up call. Based on this insight, they were able to proceed with a prototype.

One respondent says that in their AI work, communicating the technology clearly and effectively to users of the solutions they are developing is a challenge. The sandbox project gave valuable insight into the legal context of technology and the market they will operate in. This gave them a better understanding of their own technology, such as the type of architecture they should use to prevent assuming too big of a role under the GDPR framework. They also learned more about how to communicate their technology to their customers, and were able to prepare the documentation necessary to do so.

Some of the projects used focus groups to better understand end user perspectives. One respondent emphasizes that knowledge of user insights and related methods, such as focus groups, has been very valuable. Another project participant, who has experience with this method, emphasizes that they learned how challenging it is to communicate with their own users about AI and data protection. The respondent says the sandbox project made them better at this type of communication.

Project participants unlikely to have achieved these benefits in other ways Several respondents point out that the sandbox worked well to establish connections across projects, and that it was a good learning experience to work with the other sandbox projects. Some of the respondents say that they probably could have performed some of the same assessments with the aid of legal experts.

Several emphasize, however, that the method has other benefits they believe it is unlikely that they could have achieved in any other way. One points out that the breadth of the Data Protection Authority's expertise, in combination with the sandbox method, where participants are able to connect across projects, yields additional benefits that it would be difficult to achieve by other means. One project participant says they would have had to perform comprehensive assessments with the help of a data protection officer, but that this route would have been more complicated. The respondent also emphasizes the risk of exploring this subject matter, and that they are uncertain whether or not they would have dared take this risk if not for the Data Protection Authority. Several also emphasize that the Data Protection Authority's assessments carry greater weight than other types of legal counsel. Through participation in the sandbox, the participants also attracted additional national expertise in the fields of data protection and research, who would otherwise not have participated. One points out that a lack of legal precedent could entail that the assessments made carry even more weight.

Several respondents who were project participants also emphasize that it would probably not be possible to set up this kind of project if the Data Protection Authority had not been involved. There is more motivation and incentive to allocate time and resources to a project when the Data Protection Authority is the organizer.

One respondent from a smaller participating enterprise says it would be difficult to find out where to begin with this type of project, and where to find and access external expertise. The respondent also points out that smaller enterprises have more limited resources, even though their technology may be just as advanced.

Assessment of whether the Data Protection Authority has provided appropriate expertise
Several respondents say that the expertise provided by the Data Protection Authority has been very good. The legal assessments, where it has been possible to draw on experiences from other sectors, has also been highly educational for project participants. One respondent says that the opportunity to discuss areas of opportunity with individuals who are passionate about their field has been very good.

Several respondents have pointed to expertise they would have liked to see more of in their projects. One respondent says they would have like to have more technical expertise in the group. One project participant points out that, despite the project being educational, there was a somewhat uneven balance between law and technology. This respondent requests more technical expertise in the sandbox project group. One respondent says that the project was provided with robust expertise that challenged them in several different areas, but that they would still have liked to see more expertise from the sector they are entering, e.g. by bringing in external experts.

In interviews with the Data Protection Authority, respondents emphasize that legal expertise is clearly a central aspect of the expertise the Data Protection Authority can offer. They are, however, clear that technological expertise should have played a bigger role. The prominence of legal issues in projects can sometimes be attributed to an assumption that the project cannot be completed until the legal issues have been resolved. This could, however, overshadow the fact that technology can provide solutions the law cannot. These blind spots exist, and in projects where the technological expertise has been very high, the participants were the ones who provided this expertise.

Internal benefits for the Data Protection Authority
Respondents from the Data Protection Authority emphasize that the Authority knows a lot more about AI now. This is true for both employees who participated directly in sandbox project and for other employees. Benefits for the Data Protection Authority are also emphasized in many interviews with project participants.

The Data Protection Authority's annual report for 2021 emphasizes that the opportunity to go in-depth

on issues, and understand how these are experienced within the organization, generates valuable insights for the Data Protection Authority.

It contributes to building expertise and insight in key fields – be it legal, technological or social. The annual report also points out that this expertise is spreading internally, within the Data Protection Authority, in that the employees who work in the sandbox represent different units and spread this knowledge by way of internal communication.

In interviews with sandbox employees, respondents emphasize that the sandbox has boosted their confidence in speaking on the field. Data Protection Authority respondents also indicate that the sandbox has made it possible for them to speak with confidence on the benefits and challenges associated with increased use of large language models, such as ChatGPT. The annual report for 2021 also emphasizes that an increased understanding of artificial intelligence and how the regulatory framework applies to it, is important for their ability to provide good guidance, as well as case handling and supervisory activities.

5.3.3 Our assessments

The professional benefits for project participants have been very good. The benefits are different for small startups and large public enterprises. Small enterprises do not have the same access to legal resources that can spar with lawyers from the Data Protection Authority. Being able to go more in-depth on legal issues is clearly very useful for the Data Protection Authority's overall legal understanding of the field. The fact that several respondents request technological expertise in the sandbox can probably be attributed to the fact that technology can provide solutions where the law cannot, e.g. when it comes to data protection by design. If pursuit of a legal solution is taken too far, this could take attention away from the purpose of promoting innovations in ethical and responsible artificial intelligence.

Based on our assessment, it is unlikely that the project participants could have achieved these same benefits in any other way. While the projects likely could have performed some of the legal assessments with help from other legal experts, the comprehensive nature of the sandbox method yields benefits it is hard to envisage the participants achieving in another setting. This is due to the combination of having a critical sparring partner with considerable expertise and the opportunity to connect with other projects in a similar situation, which leads to useful insights. By participating in the project, the enterprises also attract additional external expertise. Participation also gives the enterprises an incentive to go through with a type of project many of them perceive as risky, due to legal grey areas and a lack of established legal precedent.

5.4 How do the target groups perceive the effects of sandbox activities based on their own needs?

5.4.1 The sandbox offers free guidance and direct dialogue

The sandbox is intended to provide free guidance to and direct dialogue with selected private and public enterprises of different types and sizes and from different sectors. Participation in the sandbox is intended to provide project participants with the opportunity to review how they use personal data in their solution, in consultation with Data Protection Authority employees, to ensure that the service or product complies with the regulations. The sandbox cannot grant exemptions from the Personal Data Act, but the focus inside the sandbox is on helping participants comply with the regulations. The methods of the sandbox are described in more detail in chapter 3.

5.4.2 Findings

Effect for participating enterprises

Beyond the project-specific benefits obtained through the sandbox, several respondents emphasize the opportunity to take insights from the project and apply them to new tools and products as a positive effect. This means lasting changes to the way they work, and goes beyond the specific project accepted into the sandbox. One respondent, for example, points out that their insights have made it possible to develop decision-support tools using AI in a number of areas, because certain principles concerning transparency have been clarified.

Several of the external experts have emphasized that data protection can feel so daunting that enterprises refrain from exploring technologies and issues. One respondent who participated in a project, reflects this by emphasizing that it would be a huge risk, from a regulatory compliance point of view, to develop a product that falls within a grey area. After participating in the sandbox, they know what the risks inherent in the technology are and what their responsibilities are. This means that they can actually implement the technology, go live, promote it and contact potential customers.

For non-participating enterprises

Methodically, it is difficult to measure effects for enterprises that did not participate in the sandbox. We have nevertheless collected information from external experts, project participants and one respondent with an enterprise that could have participated, but did not.

Several respondents, representing both project participants and external experts, find that the sandbox is very active in the area of communication. One respondent points out that the communication activities maintain a very high quality and that they use clear language, which means they communicate in a way that people can understand. The respondent points out that this is crucial for reaching small startups and others who do not have the same level of expertise and resources as large technology enterprises. In introductory interviews with sandbox employees, we learned that communication activities are based on a vision of reaching small startups in particular.

One external respondent says that the effect for the target group could have been better if there was a physical presence at events for developers, in order to establish and maintain direct dialogue with the communities developing artificial intelligence.

One external respondent says that the effect of participation for technology companies could be good. It could yield a form of "structural capital" that can be applied to problem-solving in other areas. It remains a challenge, however, that some technology companies consider the use of personal data to be quite risky. One respondent who completed a project in the sandbox also says that they are aware that some large enterprises may be hesitant to establish a dialogue with the Data Protection Authority.

5.4.3 Our assessments

For participating enterprises, there is clearly potential for a permanent change in how they approach working with AI and data protection. The effect for the target group is more difficult to measure. The target group is broad and incorporates everything from civilian society to private and public enterprises that use and develop AI.

Our findings on communication activities indicate that the sandbox reaches many with its "popular science" material that highlights the issues and challenges of AI in an ethical and responsible perspective.

Our findings show the effect may be somewhat lower for enterprises developing AI. The need for more technical guidance on artificial intelligence and corporate social responsibility could, of course, be virtually insatiable. There are, however, several indications that the target group does not find the sandbox as successful in its communication of more in-depth insights from projects. Findings from interviews with external experts show a demand for more insight into how the sandbox operates and what kind of expertise it actually offers.

Respondents also point out that the effect would be greater if representatives from the sandbox contacted key networks/clusters and organized information meetings and workshops with them.

The fact that some actors deliberately refrain from developing technology that uses personal data is an issue we have not covered in any detail here, but this will probably be a general issue for the Data Protection Authority. This issue is nevertheless more clearly evident in connection with the sandbox, because these communities could benefit greatly from insights from sandbox projects. The sandbox could profit greatly from establishing dialogue with such actors to find ways to reach this group.

5.5 How does the Data Protection Authority internally perceive the effect of sandbox activities?

5.5.1 Facts

Having an innovation-focused tool is a new experience for the Data Protection Authority. It is not in itself new for the Data Protection Authority to assume an ombudsman role and provide guidance and information, but what is new about the sandbox method is that this tool is intended to actively strengthen the Data Protection Authority's expertise.

Other internal effects from sandbox activities are covered by the Data Protection Authority's own internal evaluations. Such matters have therefore not been a priority in this evaluation. The question we emphasize in this section is whether we have any indications of the effect derived from bringing administrators who normally work with supervisory activities into sandbox activities.

5.5.2 Findings

One respondent, who works in another sandbox in Norway, says there could, in general, be some conflict between the way sandboxes work and the organizations that own them. This is due to employees, who have performance targets in their respective departments, being taken out of "ordinary operations" to perform other tasks, without ever being fully replaced in the departments where they normally work. If they are removed from this unit to work in the sandbox, their unit loses this resource for a time. This concern is not as relevant for the Data Protection Authority sandbox, however, because the sandbox has been allocated its own resources. Overall, the sandbox's funding appropriation compensates for the resources brought in as project managers from other departments.

It is nevertheless a challenge for administrators, who normally perform supervisory activities, to adapt to the sandbox method and perform more of an ombudsman role. It is also a concern that line duties will not be similarly covered when experts are pulled out to work in the sandbox.

It is also pointed out that it can be challenging to act as project manager, while also serving as the project's technical lead. Participation in the sandbox is voluntary, and some project managers refuse to take on new project once a project has been completed.

From interviews with sandbox employees, we have learned that the sandbox has challenged the Data Protection Authority's approach to work, and that this has been a desired effect. It is pointed out that some lawyers find it difficult to embrace this method, because they are reluctant to give advice they are not 100 percent certain of.

5.5.3 Our assessments

Dedicated, permanent project managers, with extensive knowledge of and experience with the sandbox method, could make it easier for subject specialists to participate. At the same time, this could also mitigate a potential conflict of objectives between departments focused on supervisory activities and guidance and the sandbox, which takes a more development-oriented approach. Such project managers will normally not have any in-depth knowledge of this particular domain, but by collaborating closely with experts, it could make participation more practicable. They could also contribute to good project progress as well as a good dialogue with and support from various stakeholders and resources that may contribute to the project.

6 Summary and recommendations

We summarize key findings and assessments from the evaluation and offer our recommendations for further development of the sandbox.

We have evaluated the Norwegian Data Protection Authority's regulatory sandbox for artificial intelligence. We have considered evaluation questions that concern both the design of the sandbox and its effects. Below, we have summarized our key findings and assessments. In this chapter, we also answer the following evaluation question:

► Which changes, if any, should be made in the further operation of the sandbox?

6.1 The sandbox is a good initiative, but it does have some challenges

The respondents we interviewed, have a predominantly positive view of the sandbox. The sandbox meets the needs of the private and public enterprises that have participated. The participants benefit and we have the impression that the Data Protection Authority also benefits greatly. The sandbox helps meet the needs of individuals and society, by generating knowledge of the intersection between artificial intelligence, data protection and the ethical use of artificial intelligence, and by solutions based on artificial intelligence being developed in a secure environment where ethics and responsibility are emphasized.

The Data Protection Authority has established a comprehensive framework for the sandbox and communicated broadly about the sandbox and its purpose. The sandbox also has a good application process, with clear application criteria. The Data Protection Authority has emphasized the selection of different types of projects, from both the private and public sectors, that support the objectives of the scheme. The projects take an interdisciplinary approach, and co-creative workshops are a key part of the method. The sandbox also emphasizes communication about the projects during and after the sandbox process. In our opinion, the sandbox has achieved its goal of highlighting and raising awareness of data protection-friendly and ethical use of artificial intelligence. In our assessment, the sandbox has a lagely positive reputation.

We nevertheless find there is potential for the Data Protection Authority to further diversify its communication about the sandbox projects, both on the sandbox website and through other channels. There is also a potential to go deeper into the subject matter, not least in the area of technology. In our opinion, the Data Protection Authority should seek to bring more technological expertise into sandbox activities. Such expertise is important, among other things to uncover the technological potential of the projects, such as data protection by design and federated learning, and to make the projects and the sandbox even more relevant from a technological perspective. Generally, we feel that the sandbox could do more to obtain insight into which target groups are being reached and which needs various subgroups have, in order to take better advantage of lessons learned.

There has been a significant reduction in the number of applications since the launch. From what we have learned, the same is true for other European sandboxes. With the low number of applications in the most recent application round, in the winter of 2023, it is our assessment that there is a risk of the number of applications falling too low, especially considering distribution across types of enterprises, topics and data protection issues. An effort should therefore be made to increase the number of applications. Alternatively, the Data Protection Authority could also target projects where the sandbox method could yield considerable benefits, such as insights and knowledge that can be generalized for a wide range of projects in the private and public sectors. Another option could be to broaden the scope of the sandbox, see the recently expanded mandate for the initiative, which could have the effect of increasing the number of applications.

In our interviews, respondents have also pointed out that the term "regulatory sandbox" is probably not especially informative or apt to describe what this initiative actually entails. A more appropriate name could increase the chances of encouraging enterprises unfamiliar with it to make further inquiries and possibly get in touch. If the name is made more descriptive and intuitive, it could be easier for potential applicants to understand what the initiative actually offers.

The Data Protection Authority supervises, and enforces, compliance with rules concerning the processing of personal data. The purpose of the Data Protection Authority's activities is to contribute to compliance with data protection legislation. The sandbox, on the other hand, is an experimental innovation tool focused on a field where developments are currently taking place at breakneck speeds. The sandbox is an entirely new type of tool for the Data Protection Authority, and this could logically create some tension within the organization. One of the questions is how the role of "facilitator" of innovation can be balanced with the Authority's supervisory role, such as in final project reports and other sandbox communication. In addition, personnel resources – often with considerable experience – are pulled out of line to participate in sandbox projects. These resources could otherwise have been used to provide ordinary guidance or perform supervisory activities in the digitalization area. On the other hand, the sandbox has yielded significant benefits in the form of improved knowledge of artificial intelligence, thereby enabling the Data Protection Authority to comment on services based on artificial intelligence with more gravitas and confidence.

6.2 Summary of our assessment of evaluation questions and recommendations for adjustments to the sandbox

This evaluation has focused on questions that concern both the design of the sandbox and its effects. Here, we summarize our key findings and assessments for each evaluation question. We also recommend some adjustments to consider for future sandbox projects.

Has the Data Protection Authority's sandbox worked as intended in light of the objectives defined by the appropriating ministries?
Our interviews indicate that the ministries are generally happy about the way the sandbox has been organized and believe that the objectives of the sandbox largely have been achieved. At the same time, they want the findings to be communicated in ways that ensure all relevant target groups are reached. This has also been emphasized in the Data Protection Authority's own plans for the continuation of the sandbox, now that it is being made permanent.

Has the Data Protection Authority's work been appropriate for its own defined goals?
The sandbox is intended be a service designed to support organizations that use personal data to develop products and services based on artificial intelligence and that can prove to be of public benefit. The goal is for the sandbox to produce benefits for organizations, the Data Protection Authority, individuals and society in general.

In our opinion, the Data Protection Authority has established and executed the sandbox in such a way that the objectives for the sandbox are attained. Both the application process and the way it is executed support the objectives of providing benefits for the organization, for the Data Protection Authority and for both individuals and society in general.

It is important that the public sector make the most of the resources spent in the field of artificial intelligence and adjacent areas within digitalization. In connection with the sandbox being made permanent, its scope has also been expanded to include data protection-friendly innovation and digitalization. We believe it is important for the sandbox that the Data Protection Authority works even more extensively with other public bodies and relevant private actors in the same field.

On this basis, we find that the sandbox has some potential for improvement:

► The Data Protection Authority can strengthen its technical expertise to enable it to also provide advice and guidance on the technical aspects of the use of artificial intelligence and other forms of digitalization. A strengthening of expertise could both take the form of adding internal resources, but also by drawing external expertise into individual sandbox projects.

► The Data Protection Authority should consider whether the sandbox should prioritize specific areas, in the same way as the UK's regulatory sandbox. Prioritization of certain areas could, for example, be based on risk/materiality assessments.

► The Data Protection Authority should facilitate for more systematic collaboration with other public and private actors in the AI field, such as the Norwegian Digitalisation Agency and the Norwegian Directorate of Health.

► The Data Protection Authority's internal process for approving final project reports also take too long and attempts should be made to shorten it.

Has the Data Protection Authority reached the relevant target groups for the measures?

The sandbox has a lot of externally directed activities. The target groups for the sandbox are many and extremely varied. Prioritizing certain target groups would probably be highly beneficial. This is especially true for universities and university colleges, where both research communities and students are key target groups. This is also true for technology development communities, which may be hesitant about processing personal data, because they do not feel they know enough about data protection. The sandbox could seek out these communities and initiate a dialogue about how to work together to increase the usefulness of the work being performed in the sandbox.

In the context of this evaluation question, we recommend the following actions:

► Establish a dialogue with the higher education sector on the possible dissemination of insights from the sandbox to research and education communities.

► Establish a dialogue with both small and large technology enterprises to discuss how these communities can benefit from the sandbox. One possibility could be to test out collaboration with clusters under the direction of Innovation Norway, which is already working to help enterprises innovate, or partner with the Norwegian Association of Local and Regional Authorities (KS) and select municipal networks.

► The Data Protection Authority should consider how insight into, and the potential need for, regulatory development can be followed up, both during and after projects.

► The Data Protection Authority should increasingly measure the efficacy of communication initiatives related to the sandbox, in addition to measuring the activities within it.

► Consideration should be given to the potential benefits of more deliberately recruiting of projects on topics and from enterprises where sandbox activities may generate substantial external ripple effects.

How successful has communication to and dialogue with target groups been?

The fact that the sandbox has a dedicated communication resource is good. It is also good that there is a dedicated sandbox web page. Our respondents find a lot of the information on this page is useful. The sandbox also does a good job of raising awareness of the sandbox and of these issues in general. However, the extent to which the scheme reaches relevant communities with more detailed insights from the projects could probably be improved.

Based on this, we recommend the following actions:

► Learn more about what various subgroups need, in order to apply insights from the sandbox. This could, for example, be achieved by testing final project reports and other communication on users, in order to adjust the content based on what the goals for the various types of communication are.

► Require that more technical information be included in the final project reports. Consider preparing multiple reports with different levels of technical information in order to reach a wider range of target groups. The goal should be that AI developers can read the report and apply the insights from it in their own work.

► Prepare more cross-project analyses and reports on topics that come up in many AI projects.

► Create a register of topics that repeatedly come up in sandbox projects. Such a register will make it easier to apply the assessments and results from the projects in other contexts.

Which specific benefits has the sandbox provided, both internally and externally?

The sandbox has provided project participants with good to very good learning outcomes. The Data Protection Authority has provided strong legal expertise, in combination with a useful methodology (sandbox method). The critical sparring participants have engaged in through the sandbox has proved valuable and given them useful knowledge of their own technology, data protection and communication with their own users on these matters.

Based on our assessment, it is unlikely that the project participants could have achieved these same benefits in any other way. While the projects probably could have performed some of the legal assessments with the help of other legal experts, the comprehensive nature of the sandbox method yields benefits it is hard to envisage the participants achieving in another setting. This is due to the combination of having a critical sparring partner with considerable expertise and the opportunity to connect with other projects in a similar situation, which leads to useful insights. By participating in the project, the enterprises also attract additional external expertise. Participation also gives the enterprises an incentive to go through with a type of project many of the participants perceive as risky, due to legal grey areas and a lack of established legal precedent.

How do the target groups perceive the effects of sandbox activities based on their own needs?

The participating enterprises perceive the effects of the sandbox to be very good. The effect for enterprises that have not participated in the sandbox is more difficult to measure. Even so, our interviews indicate that the broader target group did not learn as much from the initiative as might have been hoped. It could still be possible for the sandbox to make changes in order to better communicate the insights gained.

Based on this, we recommend the following actions:

► In addition to establishing a dialogue with technology enterprises on how these can benefit from the sandbox, the sandbox could present a larger number of papers to and organize more workshops with developer communities, clusters or actors with sectoral or regional networks and overviews.

How does the Data Protection Authority internally perceive the effect of sandbox activities?

In general, there could be conflicting objectives between how sandboxes work and the organizations that own them. This is due to employees, who have performance targets in their respective departments, being taken out of "ordinary operations" to work in the sandbox, without being fully replaced in the department where they normally work. This problem is not as relevant for the Data Protection Authority sandbox, because the sandbox has been allocated its own resources, and the overall sandbox funding appropriations compensate for the resources brought in as project managers. It is nevertheless a challenge for administrators, who normally perform supervisory activities, to adapt to the sandbox method and perform more of an ombudsman role. Based on this, we recommend that:

► The sandbox should consider using permanent and experienced project managers, with knowledge of how projects using the sandbox method should be led and managed.

Appendix A – Interview guides

Interview guide Sandbox for artificial intelligence – project participants

Introduction

- Can you briefly describe what your project is about?
- What problems were you facing?

About dialogue with the target group

- How did you first hear of the sandbox?
- Were the application criteria easy to understand?
- Can you tell us about the process of getting your project approved?
- How was the dialogue with you as project participants before, during and after the project?

Project execution

- Was the distribution of responsibilities between the parties clear?
- Was the time spent proportionate with the result?
- Was the allotted project period appropriate?
- Did the types of collaboration work as intended?

About the benefits gained

- Which specific benefits did you gain from the sandbox?
- Did benefits meet your needs? In which way?
- Did the sandbox provide appropriate expertise and activities?
- Which type of assistance or expertise would you have like to see more of?
- Would you have been able to acquire equivalent knowledge outside of the sandbox, and if so, how?

Knowledge transfer

- Were you met with any requirements or expectations to assist in the transfer of knowledge from your project to others outside the Data Protection Authority?
- What is your impression of the sandbox's work to disseminate insights from the project to others?
- How important would you say the sandbox is for developing and using ethical and responsible artificial intelligence?

Conclusion

- Do you have any suggestions for how to improve the sandbox?

Interview guide, sandbox for artificial intelligence – external respondents with knowledge of the sandbox

Introduction

- What do you know about the Data Protection Authority's regulatory sandbox for artificial intelligence?

    o Are you familiar with the methods used in the sandbox?
    o Do you know which target groups the sandbox is aimed at?
    o Are you familiar with how they work to disseminate insights from projects?

About reaching relevant target groups

- Are you aware of any communities that should know about the sandbox, but do not?
- Are there any specific enterprises or clusters of enterprises you believe should have applied for participation in the sandbox?
- To what extent would you say the sandbox is successful in disseminating insights from projects to relevant enterprises?

About the benefits gained

- Are there any issues you believe should be better represented in the project portfolio?
- Do you know whether the Data Protection Authority should have prioritized other applicants over the ones that were accepted?
- To what extent would you say the participating enterprises gain a competitive advantage?

Conclusion

- What is your general impression of the effects of the sandbox?
- Could the Data Protection Authority have prioritized using its resources in a different way that would better align with the objectives of the initiative?
- Does the sandbox contribute to the development and use of artificial intelligence in an ethical and responsible manner in Norway?
- Where do you feel the greatest potential in developing the sandbox lies?
    o Making the sandbox more widely known and more accessible
    o More detailed, comprehensive and fewer reports
    o More, shorter reports
    o Better dissemination of project results and reports

- Do you have any other suggestions for how to improve the sandbox?

Appendix B – Overview of online news articles, podcasts, events, etc.

News articles

The news articles in the table below are available at https://www.datatilsynet.no/aktuelt/.

Date	Header
03/11/2020	Establishment of sandbox for data protection and artificial intelligence
17/12/2020	Information meeting about sandbox
08/03/2021	These four are to be sandbox pioneers in privacy friendly AI
22/06/2021	Sandbox open for new applicants
16/08/2021	The sandbox seminar 2021
25/08/2021	Information meeting about sandbox application round
26/08/2021	Course on data protection for innovators
20/09/2021	21 applications for Sandbox 2.0
04/11/2021	Sandbox addresses money laundering, archiving and frail patients
17/12/2021	Sandbox nominated for award
17/01/2022	NAV first to leave sandbox
02/02/2022	Customized knowledge in the fight against cybercrime
09/02/2022	Sandbox open for new applications
11/02/2022	Launch webinar for KS report
10/03/2022	Open information meeting for sandbox applicants
29/03/2022	11 applications in third round
20/04/2022	Seminar on sandboxes
18/05/2022	Three new projects in AI sandbox
30/09/2022	Webinar: The art of learning from data you don't have
10/10/2022	Sandbox forever

21/10/2022	The sandbox seminar 2022
07/11/2022	First fruit of the sandbox
21/12/2022	What to say on the use of AI?
21/12/2022	Sigbjørn secured the sandbox
03/01/2023	Webinar: How to succeed with information about artificial intelligence
09/02/2023	Webinar: How can we keep algorithms in check?
09/02/2023	Six applied to join the sandbox
13/02/2023	Time for digital employees in the public sector
13/02/2023	Webinar: Artificial intelligence is ready for the public sector, but is the sector ready?
17/03/2023	Say what you will about the sandbox
24/03/2023	New sandbox projects explore facial recognition and police roBOTs

Podcasts

Podcast episodes in the table below are available at https://www.datatilsynet.no/regelverk-og-verktoy/personvernpodden/.

Date	Header	Series of	Listeners
09/12/2020	Episode 4: How can a sandbox contribute in the development of responsible artificial intelligence?	Personvernpodden	1005
17/02/2021	Episode 5: Watch dog raises the alarm after empty AI promises	Personvernpodden	807
19/03/2021	Episode 7: How are the British succeeding with innovation and data protection?	Personvernpodden	822
27/04/2021	Episode 8: An ethics wave washes over Europe's artificial intelligence	Personvernpodden	818
27/05/2021	#1 SandKasten: Artificial justice	SandKasten	861
09/06/2021	#2 SandKasten: The anonymization trick	SandKasten	942
24/06/2021	#3 SandKasten: The security alibi	SandKasten	811
03/09/2021	#3 Arendalsuka: Will we come out on top or fall behind?	Arendalsuka	647

08/09/2021	#4 SandKasten: Conveyor belt customization	SandKasten	683
20/04/2022	#5 SandKasten: Can robots save democracy?	SandKasten	770
19/05/2022	#6 SandKasten: White collar crime v. child prodigies	SandKasten	727
14/06/2022	Sandboxes must save legislators that are behind the times	SandKasten	702
18/08/2022	Arendalsuka: When algorithms are case officers	Arendalsuka	728
28/11/2022	#8 SandKasten: When A&E anticipates your arrival	SandKasten	669

Sandbox letters

DATE	HEADER	RECIPIENTS
24/03/2023	New sandbox projects explore facial recognition and police roBOTs	591
07/03/2023	Soon: Watch Data Protection Authority Director speak on artificial intelligence in Brussels.	548
15/02/2023	New webinars and final project reports coming up	515
31/01/2023	Upcoming deadline for new project applications. And new final project report published.	499
19/01/2023	Reminder: info meeting for sandbox applicants today at 10:00.	492
06/01/23	Webinars and new reports from sandbox	441
03/11/2022	Don't forget: This year's sandbox seminar is today! (At 09:00)	368
25/10/2022	Don't forget today's webinar! (With more to come.)	366
13/10/2022	New report, webinar on federated learning and permanent sandbox.	360
14/08/2022	Don't forget: Debate on case management algorithms and discrimination.	335
08/08/2022	When algorithms are case officers: Debate on discrimination in the age of digitalization.	333
21/04/2022	On democracy-saving robots and sandbox seminars.	309
15/03/2022	Information meeting on sandbox applications	297

11/03/2022	Application deadline and help writing applications.	297
14/02/2022	Invitation to webinar on AI in schools	278
03/02/2022	New final project report from the sandbox. And new projects fully underway.	262
18/01/2022	Sandbox letter	229
13/10/2021	On personal data and artificial intelligence	113
01/09/2021	NOW: Info meeting for sandbox applicants	113
30/08/2021	Don't forget today's webinar on data protection and artificial intelligence!	4,633
30/08/2021	Hi! Don't forget: the Sandbox seminar 2021 is today!	113
16/08/2021	Sandbox letter	115

Events

Date	Event	Type	Participants present	Stream	Recording
230313	How can we keep algorithms in check?	Hybrid	Approx. 30	140	264
230209	Artificial intelligence is ready for the public sector, but is the sector ready?	Hybrid	Approx. 50	250	No
230119	Information meeting for sandbox applicants	Digital		9	No
230113	How to succeed with information about artificial intelligence	Hybrid	Approx. 40	144	73
221107	The sandbox seminar 2022	Digital		85	133
221025	The art of learning from data you don't have	Hybrid	Approx. 80	170	436
220816	When algorithms are case officers	Hybrid	Approx. 80	N/A	118
220523	Sand storm or just a breeze?	Hybrid	Approx. 200	N/A	N/A
220428	Seminar on experience with sandboxes	Hybrid	Approx. 120	N/A	No
220216	Launch webinar AVT report	Digital		N/A	No
220315	Information meeting for potential applicants	Digital		15	
210830	The sandbox seminar 2021	Digital		200	

210819	Will we come out on top?	Hybrid	Approx. 100	74
210610	Open workshop for applicants – anonymization and pseudonymization	Digital	25	
210520	Open workshop for applicants – legal basis for processing personal data	Digital	40	
201216	Information meeting for potential applicants	Digital	60	
201201	Launch breakfast	Digital	400	

Editorial coverage

Date	Topic	Medium
14/11/2019	Regulating a revolution	Dagens Næringsliv
03/03/2020	Article on the establishment of sandboxes	cw.no
01/10/2020	Test lab for responsible artificial intelligence	Artificial intelligence supplement distributed in Finansavisen
	Advertisement Digi	
	Advertisement in DN	
	Advertisement in TU	
01/10/2020	Article on Kari's appointment	digi.no
12/10/2020	Article on suggestions for the sandbox	digi.no
	International newsletter	
01/12/2020	Article on the establishment of the sandbox	cw.no
06/01/2021	Blog entry	Personvernbloggen
12/01/2021	Article on sandbox	Norwegian Smart Care Cluster – website and newsletter
21/01/2021	Feature article on the sandbox	Computerworld
26/01/2021	Article on application numbers	juristen.no
10/02/2021	Feature article on the sandbox	Computerworld

03/03/2021	Blog entry by Kari	Personvernbloggen
08/03/2021	Article on the four selected projects	digi.no
10/03/2021	Article on KS's sandbox project	KS.no
10/03/2021	Article on NAV's sandbox project	juristen.no
12/03/2021	Sandbox mentioned in interview with BET	Dagens Perspektiv
16/04/2021	Kari is a guest on Digitaliseringspådden	Digitaliseringspådden (and article on cw.no)
22/04/2021	Kari interviewed on EU draft legislation on sandboxes	Sciencebusiness.net
14/05/2021	Article on the sandbox	version2.dk
18/05/2021	Mentioned in article on Sikri AS	digi.no
31/08/2021	Article on second application round	cw.no
21/09/2021	Mentioned in opinion piece on AI by Anders Løland	digi.no
22/09/2021	Article on round 2 applicants	digi.no
04/10/2021	Blog entry on trust in AI: Ten tons of trust, please!	personvernbloggen.no
29/10/2021	Panellist invitation NORA startup webinar – AI, Misinformation and Social Entrepreneurship	NORA.AI
18/11/2021	Article on who is fit to control AI	mlex.com
07/01/2022	Article on sandbox findings	mlex.com
11/01/2022	Blog: Explain, steady, go	personvernbloggen.no
12/01/2022	Article: Artificial intelligence and learning analytics for learning and assessment	Utdanningsnytt
17/01/2022	Article: NAV with first report from sandbox	Computerworld
19/01/2022	Article: NAV tested possibility of profiling people on sick leave using AI. Now conclusions are in.	Digi.no Extra
01/02/2022	Article: Developing ways to measure "human cyber risks" among employees	Digi.no Extra

08/02/2022	Article: Financial Supervisory Authority of Norway assisting on project in Data Protection Authority sandbox	Finanstilsynet.no
08/02/2022	Article: Financial Supervisory Authority and Data Protection Authority working together on regulatory sandbox	FinansWatch
08/03/2022	NORA: Women in AI	nora.ai
10/03/2022	Article: Testing use of artificial intelligence in data protection grey area	Juristkontakt
10/03/2022	Notice: New sandbox round for Data Protection Authority	Computerworld
16/03/2022	Article: Report from Data Protection Authority on responsible use of artificial intelligence in schools	KS.no
16/03/2022	Sandbox mentioned in DN opinion piece by Bjørn Arild Gram, Norwegian Minister of Local Government and Modernization	DN
16/03/2022	Article: Accepting new applications for Data Protection Authority sandbox for artificial intelligence	FinansWatch
24/03/2022	Article: NAV wants to use artificial intelligence to predict which individuals on sick leave will need follow-up	Juristkontakt
24/03/2022	Expanded article: New sandbox round	Computerworld

AGENDA
KAUPANG

Agenda Kaupang aids in the restructuring and development of the public sector. We help managers and employees make fact-based decisions and develop more efficient processes. Agenda Kaupang analyses and advises on management development, governance, economics, organizational development and digitalization.