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Survey Results –
Open Research Data in Research Collaborations between Higher Education Institutions and the Private Sector

Addendum to the document
"Meta-study – Open Research Data in Research Collaborations between higher education institutions and the private sector"

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This document sometimes uses masculine or feminine form of words to describe groups of people. In these cases, all members of the group are always meant, regardless of their gender.

This document, entitled "Survey Results – Open Research Data in Research Collaborations between Higher Education Institutions and the Private Sector," supplements the meta-study submitted in July 2025 as part of Action Line D2.5 of the national ORD Action Plan with a practice-oriented perspective. The evaluation is based on feedback from higher education institutions and the private sector. The document highlights practical implementation conditions for open research data, identifies challenges and outlines possible solutions. It expands and deepens the findings of the meta-study with empirically supported observations from practice.

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Executive summary

This document supplements the July 2025 meta-study on the secure use of open research data (ORD) in public-private partnerships by providing an empirically based perspective. It is based on a survey of over 300 representatives from higher education institutions (HEIs) and companies in Switzerland.

What was done: A standardised online survey was conducted between April and June 2025. It combined quantitative feedback (e.g. on incentives, obstacles, expectations) with qualitative free-text contributions. The evaluation was performed using structured content analysis and statistical clustering.

What was found: The results show that the implementation of ORD depends heavily on the institutional context. HEIs need clear responsibilities, legal certainty and technical support. Companies, in turn, demand flexible models that combine openness with protection. Both groups want practical, compatible guidelines. Key areas of tension include data ownership, governance, contract design and protection requirements.

What follows from this: The document "Survey Results" provides concrete recommendations for the development of usage-oriented guidelines. It proposes hybrid data models, contract templates and graduated governance approaches. Implementation will require coordinated follow-up projects, such as piloting at universities of applied sciences and arts or developing modular tools. The results serve as a sound basis for funding decisions and policy development in the field of ORD.

1 Introduction and Methodology

1.1 Objective and purpose of the document "Survey results"

This document supplements the meta-study from July 2025 within the framework of Action Line D2.5 with a practical, empirically based evaluation. While the meta-study analyses the legal and strategic framework conditions for dealing with ORD, the present "Survey Results" highlights how ORD is implemented in Swiss higher education institutions (HEIs) and in public-private research collaborations – and identifies possible challenges, areas of tension and good practices.
The evaluation is based on a standardised online survey conducted among HEIs and company representatives, resulting in over 300 questionnaires sent in return. Both quantitative response patterns and qualitative free-text contributions were analysed as part of a structured content analysis. The results provide a systematic insight into incentives, obstacles, institutional differences, and governance expectations.

The focus lies on the question: **What works in practice, where are the implementation obstacles, and what framework conditions are needed for the cooperative use of ORD?**

The document "Survey Results" thus provides an empirical basis for the development of concrete, application-oriented guidelines. It delves deeper into key topics from the meta-study – particularly with regard to hybrid models, protection needs, role distribution, and incentive logic – and connects theoretical analysis with operational implementation.

1.2 Integration into swissuniversities' ORD strategy

The document "Survey Results" is based on the national strategy for ORD as jointly supported by swissuniversities, the Swiss National Science Foundation (SNSF) and the State Secretariat for Education, Research and Innovation (SERI). The guideline formulated therein, "as open as possible, as protected as necessary," forms the strategic framework for this ORD project inscribed within Action Line D2.5 of the national ORD Action Plan.

The core objective of the action line is to develop practical guidelines for data use in public-private research collaborations. The present document contributes to this goal by bringing together empirically based findings from HEIs and companies, with a particular focus on challenges, incentive structures, and cooperation models.

This "Survey Results" asks how the strategic guidelines of national ORD policy are implemented in cooperative research practice – especially in situations where research data is also economically relevant. It becomes clear that the term "shared data" – i.e. research data that is jointly generated or used by HEIs and companies – has not yet been systematically taken into account in the existing ORD strategy to date. This document addresses precisely this interface.

A central area of tension arises between the normative objectives of the strategy and the practical requirements of its implementation: while HEIs have so far mostly focused their ORD strategies on data publication, data from cooperations are often not taken into account. Existing policies are often non-binding or limited to specific disciplines. On the side of companies, it is apparent that the swissuniversities strategy is hardly known; the term "ORD" is often associated with uncertainty or risk rather than innovation potential.

When designing the survey, care was taken to ensure that feedback from all types of HEIs (universities, universities of applied sciences and arts, and universities of teacher education) and from all parts of Switzerland was taken into account. This diversity is central to the study's objectives, as the use and implementation of ORD can vary greatly depending on the type of HEI and regional context. The selection of target groups and institutions was therefore deliberately based on the geographical and institutional structure of the Swiss higher education landscape.

1.3 Survey methodology

The "Survey Results" is based on a mixed-methods approach that systematically combines quantitative response patterns and qualitative assessments. The aim was to capture the practical use of ORD in Swiss HEIs and companies in a differentiated manner.

The online survey was conducted from April to June 2025 using LimeSurvey. A total of 312 questionnaires (complete and incomplete) were evaluated. The questionnaires contained both scaled response formats (e.g., Likert, multiple choice) and free text fields.

The evaluation followed a two-stage process:

1. Quantitative: Descriptive statistics (frequencies, means, cross tables by institution type) were performed using SPSS and Excel.
2. Qualitative: Free text responses were coded according to a structured content analysis (according to Kuckartz). An inductively developed category system was used for

thematic consolidation along aspects such as incentives, obstacles and governance expectations. MAXQDA was used for coding and cross-sectional evaluation.

The survey targeted two main groups:

- HEIs representatives (rectorates, research services, data stewards, technology transfer);
- Representatives of the private sector (research and development, legal, data/knowledge management).

Care was taken to include in the survey all types of HEIs (universities, universities of applied sciences and arts, and universities of teacher education) and all language regions of Switzerland. This ensured that the core requirement of swissuniversities regarding representativeness was met.

The aim was to present a comparative overview of institutional frameworks and individual perspectives in order to highlight both differences and overlaps in the handling of ORD. The results form a reliable basis for the development of practical, cross-sector guidelines.

Attention was paid to hybrid data models, i.e. combinations of controlled and open data use, as public-private collaborations have shown that completely open ORD models are neither practicable nor accepted.

When designing the survey, care was taken to ensure that feedback from all types of HEIs (universities, universities of applied sciences and arts, and universities of teacher education) and from all parts of Switzerland was taken into account. The target groups and institutions were selected closely, in line with the geographical and institutional distribution within the Swiss higher education landscape in order to ensure a perspective as differentiated and balanced as possible on ORD practices and challenges. This diversity is central to the objective of the study, as the use and implementation of ORD can vary greatly depending on the type of HEI and regional circumstances.

1.3.1 Online survey of higher education institutions

In order to collect institutional perspectives on ORD in public-private collaborations, a structured online survey was conducted among representatives of Swiss HEIs between April and June 2025. The aim was to gain insights into the implementation status of ORD, existing

governance structures, and perceived barriers and success factors from the perspective of HEIs' practices.

The survey was designed and implemented as part of Action Line D2.5 of the national ORD Action Plan jointly by FehrAdvice and Partners AG and ETH Zurich. Among others, research coordinators, employees, members of rectorates and other persons from data-related support units were addressed.

The survey was conducted using the LimeSurvey tool and included standardised selection questions and open-ended response formats. A total of 193 questionnaires were started, of which 23 were fully completed (completion rate: approx. 12%). In addition, around 170 partially completed responses were received, which were also included in the analysis if they contained substantial content. This response rate is in line with comparable empirical studies in the field of research data management and reflects both the complexity of the topic and the heterogeneity of institutional ORD structures.

In terms of content, the questionnaire was divided into six thematic modules:

- Strategies and policies for promoting ORD at the institutional level
- Roles and responsibilities (e.g. technological transfer offices TTOs, data stewards, rectorates)
- Use of technical infrastructures (repositories, classification tools, licensing, anonymisation)
- Cooperation experiences with the private sector
- Incentive and support mechanisms at HEI and funding level
- Free text examples of specific ORD practices – both in terms of good practice and conscious restrictions

The feedback comes from all types of HEIs (universities, universities of applied sciences and arts, and universities of teacher education) and covers a broad regional spectrum. The response rate shows good overall participation, but is often incomplete, which can be attributed to the complexity of the topic and the lack of institutional anchoring in some cases.

The great heterogeneity of governance models mentioned is striking. While some HEIs have established policies, central data controllers, and coordinated support services, other responses show clear indications of resource deficits, a lack of incentives, or uncertainty regarding responsibilities.

The survey results are systematically evaluated in chapters 2 (ORD Practice in Swiss Higher Education Institutions), 4 (Analysis of the Feedback) and 5 (Strategic Incentive Systems) and are directly incorporated into the development of guideline recommendations.

1.3.2 Online survey of the private sector

In order to capture the views of companies on ORD in the context of public-private research collaborations, a structured online survey was conducted among representatives of the Swiss private sector between April and June 2025. The aim was to identify expectations, obstacles and framework conditions under which ORD appears acceptable and appropriate from a business perspective.

The survey was conducted as part of Action Line D2.5 of the National ORD Action Plan and its content was adapted to the language and information situation of the private sector. The questionnaire was written in concise, clearly understandable terms and focused on key decision-making factors such as the opportunities and risks of openness, specific governance expectations, experiences with HEIs collaborations and conceivable incentive models.

The survey was addressed in particular to employees in the fields of research and development, law, data management and strategic project managers in companies with existing or potential links with research collaborations.

According to the survey tool, a total of 106 questionnaires were launched. Of these, 12 were fully completed and 45 contained usable information, which were thus included in the evaluation. The response rate of companies was lower than the one of HEIs – this finding is also observed in other studies and can be attributed to the attitude of many companies towards data sharing.

In terms of content, the evaluation highlights several key patterns: Companies frequently expressed concerns about protection, for example with regard to the loss of trade secrets or a lack of control over the reuse of data. There was a clear desire for access restrictions, embargo periods, legally secure licensing models and clear contextual information. At the same time, selective openness – such as actions to increase visibility, reputation or eligibility for funding – was considered strategically feasible under certain conditions.

Some responses were coordinated by the legal or research departments of the respective companies, which underlines the relevance of the topic in institutional decision-making structures. Shared data – i.e. shared but not freely accessible research data – was described as a potentially acceptable model in many responses.

The results of the private sector survey are evaluated in depth, particularly in chapters 3 (ORD in Private-Public Collaborations), 4 (Analysis of the Feedback) and 5 (Strategic Incentive Systems), and represent an important basis for the development of differentiated guideline proposals.

1.3.3 Response statistics and evaluation

The online surveys of HEIs and companies resulted in a high overall number of responses – albeit with a considerable proportion of incomplete questionnaires. Responses from incomplete questionnaires were not excluded, but systematically integrated into the evaluation, provided they contained usable information. The analysis thus follows the principle that even incomplete questionnaires can provide relevant information about barriers, ambiguities or structural problems.

A total of 193 questionnaires were started for the higher education sector. The final Excel export contained 55 usable responses, 23 of which were fully completed. Research-intensive universities and universities of applied sciences and arts with a high level of third-party funding were particularly active. The institutional breadth covers all types of HEIs and shows a good geographical distribution.

For the private sector, 106 questionnaires were started. In the final Excel export, 45 responses were assessable in terms of content, 12 of which were complete. The majority of responses came from small and medium-sized enterprises (SMEs) that are already involved in cooperation relationships with HEIs or active in funding programmes such as Innosuisse.

The comparatively low rate of fully completed questionnaires – in both target groups – is not unusual for surveys on highly complex content and strategic topics. At the same time, the large number of partially completed responses allows for a differentiated content analysis. Feedback that only addresses certain topic areas often reflects precisely areas where uncertainties, gaps in responsibility or institutional tensions arise.

Evaluations of response lengths, processing time and dropout behaviour were also collected and are presented in detail in Chapter 4. They provide indications of typical frictions in communication about ORD – for example, in the clarification of terms, questions about confidentiality or governance anchoring.

Overall, although the representativeness of the sample is somewhat limited, it provides a highly informative picture of the issues at stake. The survey covers a broad institutional spectrum and enables well-founded conclusions to be drawn about existing implementation practices, obstacles and development potential in the field of ORD in collaboration contexts.

1.3.4 Limitations of the empirical survey

The online survey presented here is not designed as a statistically representative study, but rather as a structured exploration of institutional and individual perspectives on ORD in collaboration research contexts. The aim was to capture key experiences, challenges and perspectives in depth – not to make sweeping generalisations about the entire higher education or private sector.

A methodological limitation arises from the proportion of incompletely filled-out questionnaires. While many of these responses contain usable statements and were therefore included in the evaluation, they *also* reveal the limitations of the survey – for example, in the form of interrupted responses, uncertainties regarding terminology, or selective participation in certain topic modules.

Furthermore, a self-selection bias cannot be ruled out, especially on the part of HEIs: it can be assumed that institutions that already have experience with ORD or existing cooperation practices were particularly likely to participate. Some responses explicitly reflect individual, personal or functional perspectives and should not necessarily be interpreted as official HEIs positions. This also applies to many responses from the private sector, some of which are strongly influenced by the personal assessments of individual managers.

In addition, the term "ORD" was often not clearly understood in the private sector context. This semantic misunderstanding had an impact on the quality and specificity of some responses and underscores the need for clear definitions in future dialogue formats and guidelines.

Despite these limitations, the survey provides valuable qualitative insights. The large number of specific individual experiences, concrete queries and identified obstacles provides a solid

basis for developing guidelines. The validity of the results is not based on statistical representativeness, but on the depth and complexity of the feedback provided.

The results of this survey therefore do not serve as a basis for normative decisions in the narrower sense, but as a starting point for the differentiated, evidence-based further development of collaboration ORD framework conditions.

1.4 Structure of the document "Survey Results"

The document is divided into eight chapters and follows a logical structure:

Chapter 1 describes the objectives, strategic embedding and methodology of the online surveys conducted at HEIs and companies.

Chapter 2 analyses the current status of ORD at Swiss HEIs, including strategies, responsibilities, funding logic and technical infrastructures.

Chapter 3 highlights companies' perspectives on ORD in collaboration projects, including challenges, benefits and model solutions.

Chapter 4 systematically evaluates the survey results and interprets them in terms of their relevance for the development of guidelines.

Chapter 5 discusses possible incentive systems for promoting ORD in public-private collaborations.

Chapter 6 contains specific governance recommendations, for example on role models, contract modules and institutional synergies.

Chapter 7 summarises key findings, identifies existing gaps and outlines perspectives for possible follow-up projects.

Chapter 8 contains the appendix with a glossary, the complete questionnaires and a bibliography.

2 ORD Practice in Swiss Higher Education Institutions (HEIs)

2.1 Status quo: Prevalence of ORD strategies and policies

The results of the HEIs survey show that the institutional anchoring of ORD in Switzerland is still in a fragmented and largely exploratory stage of development. While some HEIs already have formally adopted strategies and internal policies to promote ORD, comparable structures are lacking at some universities of applied sciences and arts and universities of teacher education or are only in the planning phase (cf. swissuniversities, 2021; ETH Zurich, 2022).

Of the fully completed questionnaires, around one third of HEIs stated that they had concrete, institutionally coordinated ORD strategies in place. Other institutions are in the early stages of development or piloting, often triggered by external requirements such as the data management plan specifications of the SNSF or of European funding programmes (cf. SNSF, n.d.; EOSC SRIA, 2021).

The following patterns emerge from the feedback:

- Universities comparatively often have overarching strategic frameworks or structured data governance initiatives.
- Universities of applied sciences and arts are showing growing interest in ORD, but often rely on individual initiatives – for example, from committed researchers or coordination offices.
- Universities of teacher education have so far remained largely not visible in the field of ORD, both in terms of strategic documents and practical implementation approaches.

A key differentiating factor is the existence of clearly assigned roles (e.g. data stewards, TTOs, research coordination) that are supported by human resources and institutional backing (cf. Fecher et al., 2015; Future of Privacy Forum, 2023). In these cases, it is evident that ORD is being systematically developed and proactively integrated into internal processes. In other cases, policy development remains sporadic and reactive – usually triggered by external requirements or individual case decisions.

These institutional differences can be described as a three-stage model:

Development stage	Characteristics	Typical sponsors
1. Exploratory	No formal strategy document, selective engagement with ORD	Majority of universities of teacher education, some universities of applied sciences and arts
2. Strategic in progress	Policy draft available, initial implementation measures	Some universities of applied sciences and arts, some universities
3. Implemented	Adopted strategy, clearly defined responsibilities	Universities with an active ORD focus in particular

A common misunderstanding is the equation of ORD with open access: Several responses made it clear that the term "ORD" is mistakenly used to refer to the publication of scientific articles. There is a clear need for clarification of terminology here – for example, through mandatory definitions in training formats, templates or data management plan specifications (cf. Wilkinson et al., 2016).

Furthermore, it has been shown that corporate data and data release issues in the context of collaborations have rarely been considered in strategic frameworks to date (cf. Thouvenin and Volz, 2024). Shared data as a separate category is missing from many HEIs strategies, as are clear guidelines for handling sensitive data in public-private research projects.

In terms of content, existing ORD strategies often focus on aspects of technical infrastructures (e.g. repositories, long-term archiving), but not on governance issues such as licensing, confidentiality, access models or data classification. It is particularly striking that hardly any HEIs have internal guidelines or templates for ORD design in collaborations with the private sector.

The results underscore the need for differentiated, context-specific guidelines:

- Universities need detailed governance and role models.
- Universities of applied sciences and arts benefit from practical templates, training opportunities and resource models.
- Funding institutions can effectively address strategic gaps through targeted support, for example in the creation of data management plans, legal templates or platform access.

The feedback also shows that active implementation of the National ORD Strategy is only successful where *institutional* competencies, human resources and strategic responsibility are sensibly bundled (cf. swissuniversities, 2021; OECD, 2021).

2.2 Roles and responsibilities (e.g. technology transfer offices TTOs, data stewards, rectorates)

The implementation of ORD at Swiss HEIs is currently characterised by a high degree of institutional heterogeneity – particularly with regard to responsibilities and role definitions. The feedback from the survey clearly shows that many HEIs do not have formally defined or structurally anchored responsibilities for data management, data release or ORD-related governance issues (cf. Fecher et al., 2015; Tenopir et al., 2011).

Smaller or decentralised institutions in particular often do not have a central point of contact for ORD issues. Instead, tasks are taken on *ad hoc* by committed researchers, project managers or research assistants – usually in addition to their existing roles and without systemic integration. This person-based organisation not only leads to high workloads for individual actors, but also to institutional opacity and coordination gaps (cf. Future of Privacy Forum, 2023).

Where formalised role models exist, the following patterns emerge:

- Universities tend to have centrally located data stewards, research services or legal departments that coordinate ORD matters (cf. ETH Zurich 2022; EPFL n.d.).
- TTOs (technology transfer offices) are occasionally involved in issues relating to legal protection, data protection or contract drafting with third-party partners – but usually on a project-specific basis and without permanent responsibility (cf. Thouvenin and Volz, 2024).
- In many cases, responsibility for ORD-related decisions – such as data classification or licence selection – lies with the departments or individual project managers themselves, often without formal training, guidelines or escalation structures (cf. SPARC, n.d.).

Numerous responses indicate that ORD knowledge heavily dependent on individuals. These individuals often have extensive expertise in data management plans, licensing, anonymisation or confidentiality issues, but are not institutionally supported. As a result, personal skills are lost when individuals change jobs or are not systematically passed on. In many cases, there is no institutionalised form of "knowledge memory" (cf. also Borgman 2012).

This structural gap is exacerbated by several challenges:

- Decisions on how to handle sensitive data are often uncoordinated or contradictory.
- There are no binding escalation paths in case of conflicts of interest or governance issues.
- Roles such as data stewards or ORD coordinators do exist in some cases, but they rarely have decision-making authority or strategic involvement (cf. SNSF, n.d.).

Several HEIs therefore express the need for the following in their feedback:

- Institution-wide, binding responsibilities for ORD-relevant processes;
- Permanent role profiles (e.g. for data stewards, legal contacts);
- Coordinated support units that integrate governance, IT, legal and research.

The gaps described are even more pronounced when HEIs collaborate with private sector partners, that tend to be sceptical about ORD. These findings underscore the recommendations of the meta-study and the National ORD Strategy: The sustainable implementation of ORD depends on clearly defined, permanently institutionalised responsibilities (cf. swissuniversities, 2021; OECD, 2021). Individual initiatives or project-based centres of excellence alone are not sufficient to strategically secure ORD and make it capable of cooperation.

2.3 Funding logic and incentives

The survey results clearly show that ORD in Swiss HEIs has so far rarely been promoted through explicit, strategically anchored incentive systems. Instead, support is often based on informal structures, individual initiative and external requirements – in particular from national and international funding institutions such as the SNSF, the European Commission or swissuniversities (cf. SNSF, n.d.; swissuniversities, 2021; European Commission, 2018).

Internal incentive systems: Selective, mostly not structurally anchored

Only a minority of the HEIs surveyed have clearly defined, internal funding mechanisms for ORD. The most frequently mentioned support measures include:

- Assistance in creating data management plans (DMPs) – for example, through templates, workshops or individual consultation. These services are mainly found at

research-intensive HEIs with central research funding offices (cf. ETH Zurich 2022; EPFL n.d.).
- Technical support in the form of storage solutions, repository access or central data infrastructures (cf. University of Basel, n.d.; ORD@CH).
- Individual advice from data stewards, libraries or research services – often only on request or within the framework of specific projects (cf. Tenopir et al., 2011; Future of Privacy Forum, 2023).

Financial incentives, such as additional funding for ORD-friendly projects or bonus schemes, were mentioned much less frequently. Reputation-based recognition models – such as the consideration of ORD activities in appointment procedures or performance agreements – are also hardly institutionalised (cf. Fecher et al., 2015; Borgman, 2012). This is particularly true for smaller universities of applied sciences and arts, where corresponding funding logics are often completely absent or supported by individuals.

External impulses: Drivers with limited leverage

External requirements currently work as stronger drivers for ORD activities than internal structures. The following were cited as particularly influential:

- SNSF requirements for the mandatory creation of DMPs for funded projects (cf. SNSF, n.d.);
- EU funding logic, particularly within the framework of Horizon Europe, which increasingly integrates ORD elements in a binding manner (cf. European Commission, 2018; EOSC SRIA, 2021);
- Strategic targets set by swissuniversities, e.g. with regard to FAIR principles, shared data components or requirements for infrastructure projects (cf. swissuniversities, 2021; UNESCO, 2021).

However, these external requirements do not automatically lead to sustainable internal reforms. Instead, implementation often remains reactive: ORD is taken into account when it is necessary for project approvals – without institutional development of roles, policies or infrastructures.

Subjective perception: What works – and what doesn't?

The survey also invited HEIs to assess the perceived effectiveness of various funding instruments. Three measures in particular were considered to be particularly helpful:

- Functional support for data management, in particular through data stewards and training courses;
- Technical infrastructure that provides easy access to repositories, storage or classification tools (see Zenodo; SWITCH; DMPonline);
- Tailor-made solutions, e.g. licensing models, embargo options or graduated access concepts (cf. SPARC, n.d.; Thouvenin and Volz, 2024).

In contrast, undifferentiated requirements – such as generic DMP templates or formal disclosure obligations – were considered by many to be unhelpful or even counterproductive. These were often too abstract and not tailored to specific collaboration contexts.

Conclusions and implications

The results underscore the need for practical incentive systems to promote ORD. Internal institutional policies should be coupled with concrete, operational support measures – such as institutionalised counselling, continuing education programmes and structured recognition models. At the same time, funding institutions could effectively support the development of sustainable ORD structures through targeted levers – such as financial support for institutional governance structures, temporary start-up funding for ORD roles or the differentiation of shared data models (cf. OECD, 2021; NIH, n.d.).

2.3.1 Internal support structures

The survey shows that the internal support structures for implementing ORD at Swiss HEIs vary greatly. While some HEIs have established systematic programmes, ORD at many institutions continues to be based on individual initiative and informal solutions.

The most frequently mentioned forms of internal support are:

- Assistance with the creation of DMPs, e.g. through templates, personal advice or short training formats. These services are mainly found at HEIs with research services or specialised support units (cf. ETH Zurich 2022; EPFL n.d.).
- Technical infrastructure services, such as dedicated repositories, access to platforms such as Zenodo or SWITCH, and limited storage capacity for research data (cf. swissuniversities, 2021; University of Basel, n.d.).
- Individual advice from data stewards or library staff, but mostly project-related and not available across the entire organisation (cf. EOSC SRIA, 2021; Tenopir et al., 2011).

Feedback clearly shows that these services are often patchy or not institutionally secured. Many HEIs do not have dedicated help desks, training units or legal support in relation to ORD. The introduction of appropriate structures often depends on committed individuals or third-party funded projects – but not on strategic decisions at management level (cf. Fecher et al., 2015; Borgman, 2012).

A key finding is that although data stewards do exist in some cases, their roles are in most cases not formally defined or secured in terms of personnel. Job profiles vary greatly, and there is often a lack of institutional links or clear escalation paths for legal or governance-related issues (cf. Future of Privacy Forum, 2023; Thouvenin and Volz, 2024). This is even more true when HEIs negotiate cooperation with the private sector and are expected to develop solutions for enabling ORD.

Another pattern can be seen in relation with infrastructure projects: HEIs that have robust IT and data management structures – for example, through participation in ORD- initiatives, data centres or dedicated research platforms – have a higher implementation rate for ORD requirements. Where these structures are lacking, however, ORD is often perceived as an additional burden that can hardly be implemented sustainably without institutional support (cf. UNESCO, 2021; NIH, n.d.).

The HEIs surveyed make it clear that:

- Consulting services, licensing assistance and infrastructure access are crucial levers for ORD implementation.
- In many places, ORD remains a "voluntary task" that is heavily dependent on individual motivation.
- Without institutional support and strategic integration, existing services will not be used or developed on a long-term basis.

These findings support the call for increased investment in permanent support structures – for example, through established data stewardship roles, central help desks and modular training programmes.

2.3.2 External requirements

A key finding of the HEIs' survey is the high degree of control exercised by external funding institutions in the area of ORD. In particular, the SNSF, the European Commission (e.g. via

Horizon Europe) and Innosuisse act as key drivers for the implementation of ORD requirements in research projects (cf. SNSF, n.d.; European Commission, 2018; EOSC SRIA, 2021).

Data management plans as a standard requirement:
The obligation to create DMPs is one of the most frequently mentioned control instruments. The feedback clearly shows that many universities only begin to systematically address ORD requirements in the course of SNSF applications or EU funding processes. The DMP requirement is seen as an important impetus for professionalisation, but also as an additional bureaucratic burden – especially when no support is available for their creation (cf. ETH Zurich, 2022; Tenopir et al., 2011).

FAIR principles and data release:
Funding institutions are increasingly requiring research data to be prepared and made available in accordance with the FAIR principles (Findable, Accessible, Interoperable, Reusable) (cf. Wilkinson et al., 2016; European Commission, 2018). HEIs generally recognise this as a sensible approach, but often criticise the lack of differentiation according to discipline, data type and cooperation context. Especially in projects with industry partners and personal data, standardised requirements can only be implemented to a limited extent (cf. Fecher et al. 2015; Thouvenin and Volz, 2024).

External impetus ≠ institutional implementation:
The survey shows that external requirements are often the trigger for initial ORD activities – e.g. via project approvals – but do not automatically lead to structural anchoring in the institution. Implementation is often project-based and remains limited to the respective research project. Strategic policies, permanent support services or governance structures only emerge in individual cases (cf. Borgman 2012).

Pressure to meet expectations and resource gaps:
Several HEIs emphasise in their comments that the pressure of expectations from external funding institutions is disproportionate to the resources available. Smaller HEIs in particular feel left alone in implementing the required standards – especially when there is no central data infrastructure or legal support available.

Key points:

- The SNSF and EU programmes have a strong structuring effect – especially through DMP obligations and data availability requirements.

- Implementation often remains reactive and project-specific – institutional continuity is lacking in many places.
- HEIs request for more guidance, templates and differentiated requirements that better reflect practice realities.
- In addition to formal requirements, external funding bodies should also provide targeted support for the development of internal capacities (e.g. data stewardship, infrastructure).
- The integration of collaborative data (shared data) remains unclear or insufficiently regulated in many funding programmes.

2.4 Use of technical infrastructures

2.4.1 Repositories and platforms (e.g. SWITCH, Zenodo, ORD@CH)

A central component of ORD implementation is the technical infrastructure for storing, archiving and publishing research data. The results of the survey show that Swiss HEIs use a heterogeneous range of repositories and platforms – some institutionally anchored, some project-related or based on external offerings.

Platforms used:
Platforms frequently mentioned in the responses are:

- Institutional repositories of individual HEIs, usually in conjunction with libraries or IT services,
- National platforms such as SWITCHdrive, ORD@CH or institutional participation in swissuniversities' initiatives,
- International offerings such as Zenodo, Figshare or Dryad, especially in disciplinary contexts with established repository traditions or international funding logic (see also EOSC SRIA, 2021; UNESCO, 2021).

The choice of platform typically depends on disciplinary standards, project specifications and existing infrastructure. It is apparent that universities tend to rely more on their own systems, while universities of applied sciences and arts, as well as smaller institutions are more dependent on supra-regional or international offerings.

Uncertainties in platform selection:
Several HEIs report uncertainties when choosing the "right" repository. Decision-making factors such as long-term availability, licensing models, data formats, legal frameworks (especially

FADP/GDPR) or embargo functions are not always clearly documented or regulated at the institutional level.

Some feedback indicates that researchers themselves have to decide where and how data is published – often without technical, legal or strategic support. This leads to inconsistent data publication and, in some cases, incomprehensible storage strategies.

Infrastructure bottlenecks and needs:
Respondents repeatedly express a need for stable, legally secure repositories. Particularly in the context of cooperations with the private sector (shared data), the need for platforms with access controls, embargo functions or graduated licences is emphasised (see also Fecher et al., 2015).

In addition, many institutions lack the organisational and human resources to ensure the operation, support and long-term maintenance of such infrastructures. Some HEIs refer to ongoing pilot projects or considerations to operate repositories jointly with other institutions.

Key points:

- HEIs use a wide range of repositories: institutional, national (e.g. SWITCH, ORD@CH) and international (e.g., Zenodo).
- There is uncertainty when it comes to choosing a platform: Legal, technical and disciplinary criteria are often unclear.
- In many cases, there is a lack of technical or legal support for publication.
- Access control and embargo options are key requirements, especially for collaborative data.
- There is a clearly articulated need for sustainable infrastructures, supported by national funding institutions.
- Infrastructure bottlenecks are slowing down the effective implementation of ORD in practice.

2.4.2 Tools for data classification, licensing and anonymisation

A key objective of the survey was to gain insight into the specific technical tools that HEIs use to implement ORD – in particular for data classification, licence selection, anonymisation of personal information and access control.

Status quo of tool use:

The survey reveals a mixed picture:

- Many HEIs are familiar with relevant tools or use them selectively,
- But they are often not integrated into institutional processes or policies.
- Use is mostly project-related and depends heavily on the initiative of individual researchers (cf. Tenopir et al., 2011; ETH Zurich, 2022).

Frequently mentioned tools:

- **Zenodo** (archiving, DOI assignment – often used in EU projects),
- **SWITCHdrive** (Swiss infrastructure for data storage and exchange),
- **DMPonline** (tool for creating DMPs – primarily in the SNSF context),
- **Amnesia** (anonymisation tool for personal data; cf. FPF, 2023),
- **OpenBIS, FAIRDOM, Labfolder** (discipline-specific data management systems),
- **Creative Commons Tools** (CC-BY, CC0 – for licence selection; cf. SPARC, n.d.).

The feedback emphasises that the technical quality of these tools is generally perceived as positive. However, two key obstacles were also identified:

1. **Lack of institutional embedding**
    - There are hardly any binding guidelines on which tools should be used and when.
    - Decisions are often left to the research team (cf. also EOSC SRIA, 2021).

2. **Legal uncertainty**
    - There are doubts about the legal validity of licences (e.g. CC-BY in commercial contexts)
    - or the scope of anonymisation tools in relation to FADP/GDPR compliance (see also Thouvenin and Volz, 2024; GDPR 2016/679; Swiss FADP).

Requirements and recommendations from the survey:

There were multiple requests for:

- Nationally recommended tools with standard integration into repositories and DMPs,
- Clear guidelines for legally compliant use – especially for collaborations with the private sector,
- Connection between tools and institutional processes: for example, through specifications in policies, evaluation criteria or funding conditions (cf. swissuniversities, 2021).

Particularly in the context of shared data and cooperation projects with industry, it became clear that technical tools must not only be available, but also strategically integrated, legally clear and supported by technical assistance. This is where the guidelines to be developed should come into play.

Recommendations for guideline development:

- Definition of a national toolset (e.g., for anonymisation, licence selection, DMP creation)
- Development of training formats and templates with practical examples,
- Integration of tool use in:
    - Cooperation agreements,
    - Funding logic,
    - Institutional guidelines and policies (cf. UNESCO, 2021).

Key points:

- Technical tools exist but are hardly strategically anchored.
- Decisions on their use are not coordinated.
- There is a lack of legal clarity and operational support.
- Governance links are necessary to effectively implement ORD standards.

2.4.3 Resources and knowledge

A key finding of the survey concerns the structural barriers to the implementation of ORD. Deficits in human, financial and infrastructural resources are particularly frequently cited. Many HEIs report that the introduction and sustainable implementation of ORD fails due to a lack of personnel, insufficient IT support or time constraints (see also Tenopir et al., 2011; Wilkinson et al., 2016).

Numerous responses emphasise that ORD activities – such as the creation of DMPs, the classification of data or the technical implementation of anonymisation – are usually carried out as additional tasks alongside research, teaching and project administration. The associated additional workload means that in many cases, ORD is only implemented on an ad hoc basis or to a minimal extent (see also Borgman, 2012; Fecher et al., 2015).

Another obstacle is the lack of internal expertise. Smaller institutions or departments without technical specialisation in particular lack expertise in key areas such as licensing, versioning

and data protection-compliant publication. The few specialists available – e.g. data stewards or IT support staff – are often overworked or not permanently integrated into the institution (cf. EPFL, n.d.).

Cooperation projects with external partners, especially from the private sector, bring additional challenges: they often require a specific data infrastructure, clearly defined interfaces and a common understanding of protection needs. However, many researchers state that they cannot afford the necessary technical, legal and organisational costs (see also Future of Privacy Forum, 2023; Thouvenin and Volz, 2024).

These findings suggest that ORD can only be successfully established in HEIs if it is not solely dependent on individual initiatives or temporary third-party funded projects. Rather, targeted investments in permanent roles (e.g., data stewardship), technical infrastructure and competence-oriented training programmes are required.

2.4.4. Uncertainties regarding the legal framework

Legal uncertainties are a key obstacle to the implementation of ORD at Swiss HEIs. In the survey responses, legal issues were consistently cited as one of the most common problem areas – especially in relation to databases from cooperations.

These uncertainties affect various legal areas such as data protection law, intellectual property (IP), contract law and international export restrictions. Many HEIs – especially small and medium ones – do not have sufficient specialised legal advice to reliably clarify data-related issues concerning release, licensing or use of third-party funding. Internal support, where available, is often not tailored to ORD issues (see also ETH Zurich, 2022; NIH, n.d.).

In addition, key legal norms – such as the GDPR and the revised New Federal Act on Data Protection (nFADP) – are often interpreted *differently*. These uncertainties lead to a "culture of caution" in which research data tends to be withheld for fear of legal violations. The situation becomes particularly complex in collaborations with private sector and international partners, where different legal traditions and protection interests collide (see also HIPAA, 1996; OECD, 2021).

Without clear governance guidelines and legally binding data contracts, ORD often remains hindered in such constellations. There is a high demand for practical legal support. Among other things, FAQ collections, standard contracts, model clauses and advice centres were

mentioned. The national pooling of legal expertise – e.g. through a joint service point run by swissuniversities, SNSF and Innosuisse – was also proposed on several occasions (cf. swissuniversities, 2021).

The results make it clear that legal issues are not just a marginal topic, but are crucial for the strategic implementation of ORD. Without reliable framework conditions, much potential remains unexploited – especially in data-intensive, cooperation-based fields of research.

2.5 Case studies (from the questionnaires)

In order to supplement the results of the structured survey with illustrative practical references, several free-text responses were qualitatively evaluated and consolidated into exemplary case vignettes. The following three *anonymised* short examples show typical challenges and forms of implementation of ORD in the context of public-private collaborations. They illustrate key areas of tension, patterns of action and conditions for success.

Note on methodology: The case studies are not based on individual, traceable responses, but were constructed in a synthetic manner based on the online survey (data as of July 2025). They represent consolidated representations of typical feedback – either through recurring patterns, abstracted quotations or combinations of both approaches. These are not individual case studies, but realistic *types* that contribute to orientation and guideline development.

Case 1: Embargo model with pharmaceutical companies
"We collaborated with a research-oriented pharmaceutical company. The raw data remained closed for the duration of the study, with no access to third parties. After project completion, the metadata and anonymised results could be published via SWITCHdrive – after approval by the company."

Learning: This model shows that hybrid openness strategies (e.g. embargo and subsequent publication) are practicable in areas requiring protection – provided that clear contractual requirements (e.g. data use agreements), coordinated schedules and technical infrastructures are in place.

Case 2: Lack of governance – ORD remains theory
"ORD was not an explicit topic in our project. The collaboration with the company went well, but no one knew exactly whether or how we would be allowed to share the data. A DMP was completed, but only *pro forma*."

Learning: The case vignette shows that formal requirements such as a DMP remain ineffective without clear governance structures. A lack of responsibilities (e.g. data stewards, TTOs) leads to inconsistency and uncertainty in implementation.

Case 3: Refusal to cooperate due to open data condition
"A partner company deliberately refused a research collaboration after learning that all data would have to be published as part of the project. The negotiations failed because economic interests could not be protected."

Learning: This feedback highlights the tension between openness and protection interests. Without confidence-building protection mechanisms (e.g. embargo, access levels), the obligation of HEIs to disclose information can hinder collaborations with the private sector.

Conclusion on 2.5:
The case vignettes make it clear that ORD in public-private collaborations is not a binary decision, but a negotiation process. Success depends on:

- Clear institutional responsibilities,
- Trust-building measures towards partners,
- And transparent, legally sound governance models.

These vignettes thus support the recommendation to include practical templates, modular licensing models and proactive role allocations in future guidelines.

3 ORD in Private-Public Collaborations

3.1 Forms of cooperation and data sharing

The survey results show that public-private collaborations between HEIs and companies in Switzerland take many different forms. Typical forms of cooperation include publicly funded research projects (e.g. SNSF, Innosuisse, EU funding programmes such as Horizon Europe), traditional contract research, long-term innovation partnerships and strategic research alliances (see also swissuniversities, 2021; European Commission, 2018).

The participation of companies is often project-based and in many cases linked to specific, application-oriented research questions. In Innosuisse projects and EU consortia in particular, cooperation is systematically structured by funding logic. This often includes requirements for transparency of research results and the handling of research data (see also EOSC SRIA, 2021; NIH, n.d.).

The willingness to open up data is generally higher in these contexts, as it is a condition for receiving funding. Nevertheless, ORD remains a secondary issue for many companies, after economic interests, product development goals and the protection of trade secrets (see also Bhatnagar et al., 2022; Thouvenin and Volz, 2024).

The way in which data is shared or made accessible varies considerably: Some collaborations work with shared data rooms or embargo regulations, while others explicitly exclude full data sharing. Decisions on data sharing are often not taken at the start of the project, but only during or after its completion – and depends on legal assessments, negotiations or the relationship of trust between the partners.

Crucially, the use and release of company data is rarely governed by institutional standards, but rather by individual project constellations and the goodwill of individuals. This leads to a certain lack of transparency and makes it difficult to establish systematic ORD practices.

From the perspective of the companies surveyed, the focus of collaborations is not on opening up data, but on access to academic knowledge, young talents and innovative technologies. ORD is accepted when it is associated with concrete benefits or political funding logic – rather than as a fundamental practice (cf. also Fecher et al., 2015; EPFL, n.d.).

These findings underscore the need not only to focus on formal ORD requirements when developing guidelines, but also to take into account the forms of cooperation, sectoral differences and dynamics between research and practice (see also European Commission, 2018; UNESCO, 2021).

3.2 Challenges in practice (confidentiality, protection interests)

The survey results from the private sector clearly show that companies are very reluctant to implement ORD in public-private collaborations. The main concerns relate to interests protection, loss of control and legal uncertainty.

In detail, the private sector cited the following main concerns:

- **Loss of confidentiality**: the disclosure of sensitive information could allow conclusions to be drawn about business models, customer relationships or development processes.
- **Risk to intellectual property (IP)**: There is a fear that competitive know-how could become uncontrolled and thus accessible to competitors – especially in international collaborations with unclear protection standards.
- **Lack of control over data use**: Companies see a risk in not being able to track who accesses their data, when and how, and whether it is modified or further transferred.
- **Reputational risks**: Without contextual information, there is a risk that data will be misinterpreted by third parties, which can be particularly problematic in sensitive areas of application (e.g. health data, user behaviour).
- **Unclear legal situation**: Many companies find data protection law, contract law and international frameworks contradictory or difficult to manage.

As a direct response to these risks, companies report the following requirements:

- **Early, contractually defined approval processes** and clear responsibilities to protect against unwanted publication,
- **Embargo regulations and internal review rights** prior to publication,
- **Technical access controls**, e.g. password-protected systems, defined licence models.

In many cases, sensitive data is managed outside the project context or not shared at all. This creates a conflict between the willingness to cooperate and the need for protection, which can

limit the reproducibility and reuse of scientific results (see also Tenopir et al., 2011; Borgman, 2012).

Overall, it is clear that regulatory requirements alone are not sufficient. Companies need trust-building structures**,** standardised procedures and contractually enshrined safeguards**.** Governance models must therefore systematically balance confidentiality and cooperation with openness in order to establish ORD as a viable option in the private sector (see also swissuniversities, 2021; EOSC SRIA, 2021).

3.3 Corporate perspective on ORD: benefits, obstacles and conditions

The evaluation of the survey responses from the private sector reveals a complex picture of the corporate perspective on ORD. In principle, ORD is not at the centre of many companies' cooperation strategy with HEIs but is considered potentially useful under certain conditions.

The attitude towards ORD is not fundamentally negative, but strongly condition-oriented and characterised by concrete considerations of benefits. The most frequently cited benefits include:

- A potential **image boost** through participation in open science initiatives,
- The **promotion of an innovative corporate culture**,
- And **international visibility** in publicly funded projects, such as Horizon Europe or Innosuisse programmes.

Companies see strategic added value in particular when ORD contributes to participating in an international research environment or can open new funding opportunities (see also swissuniversities, 2021).

At the same time, clear requirements and restrictions have been formulated:

- **Control and protection**: ORD is only considered acceptable if protection interests are safeguarded – for example, through contractually defined access restrictions, embargo periods or explicit rights of use.
- **Selective openness**: Preference is given to differentiated openness strategies in which data is released in stages or provided in anonymised form.

- **Link to standards**: ORD is more widely accepted when it is linked to well-known standards (e.g. ISO 23494-1:2023) or existing formats such as non-disclosure agreements (NDAs) and internal data classifications.
- **Delayed publication**: The option to use data internally first and publish it later – after completion of business-relevant processes – is particularly appreciated.
- **Tiered access**: Many companies are calling for tiered access systems with defined usage scenarios, e.g. project-related access or consortium-limited visibility.

Despite these constructive suggestions, it is clear that the term "ORD" is often unclear or misleading in the private sector. It is sometimes confused with "open access" or general innovation approaches. These concepts often seem too academic or research-related (see also Bhatnagar et al., 2022; Tenopir et al., 2011).

Another point is that ORD is often perceived as an additional *administrative* burden, especially when there is no direct project relevance or clear strategic benefit. In such cases, it is likely that data will not be shared or that ORD will be excluded from the project plan from its beginning (see also Borgman, 2012).

Companies do not reject ORD outright, but they do set clear conditions in terms of control, usability, protection and compatibility with operational standards. The development of practical guidelines must take these conditions into account in order to establish ORD in public-private collaborations.

3.4 Model solutions

A key finding of the surveys conducted with the private sector is the desire for practical and legally secure model solutions for dealing with ORD in cooperation projects. Companies are generally interested in transparent but controllable forms of data sharing – however, there is a lack of established standards that could serve as a basis for contract design and cooperation practices.

In practice, ORD has rarely been systematically regulated in public-private collaboration. Often, there are neither explicit contractual clauses on data release nor standardised protection mechanisms. Instead, the publication of sensitive data is often excluded or decided on an *ad hoc* basis by individual stakeholders – without review procedures or clearly defined release processes (see also Borgman, 2012; Fecher et al., 2015).

From a corporate perspective, there is a considerable need for modular, legally viable contract modules that combine openness and protection requirements. Three frequently mentioned models are:

- **Embargo models** for delayed data release (e.g. to protect patent applications or market strategies)
- **Tiered access** as a differentiated access solution depending on role and purpose (known from biomedicine),
- **Licensing models** that enable legally secure and differentiated terms of use (e.g. based on CCs).

These findings point to a key area of action for future guideline development: Successful model solutions should be based on modular templates, legal protection components and graduated openness options (see also European Commission, 2018; Singapore RIE 2025; Wilkinson et al., 2016).

Overview of model solutions:

Model type	**Access**	**Degree of control**	**Suitability**	**Effort**	**Practical examples***
Embargo model	Public after expiry of deadline	High control during embargo period	Protection of IP, patents, strategic evaluation	Medium to high	Publicly funded cooperation projects
Tiered access	Tiered access based on role	Very high (role-based)	Biomedicine, data-intensive consortia	High	Biobanks, EU projects with data splitting
Licence model	Public or selective	Medium to high (contractual)	Standard data with clear purpose limitation	Medium	CC licences, sector-specific templates

*Experience gained from questionnaire responses and international initiatives.

3.4.1 Embargo models

A key concern for many companies in the context of ORD is the protection of competitive information for a defined period after project completion. Embargo models are a solution that was mentioned several times in the surveys. They enable delayed data release and are seen as a means of adequately protecting innovation leads, patent applications or product developments (see also Future of Privacy Forum, 2023).

Such models stipulate that data initially remains locked and is only made publicly, or selectively, accessible after the expiration of a contractually defined period. The duration – the so-called embargo – varies depending on the type of project and data. The responses mentioned embargo periods ranging from six months to several years. Companies reject general solutions and emphasise the need for context-dependent regulations.

Important requirements for embargo models are:

- Access control with user management
- Licences restricting use,
- Governance-based release processes,
- Visible labelling of embargoed data.

Such models are considered compatible if they are accompanied by clear procedures and reliable framework conditions. Especially in publicly funded projects with private sector participation, the embargo is seen as a realistic compromise between openness and the need for protection (see also Tenopir et al., 2011; OECD, 2021).

Differentiation according to data types – e.g. technical data versus personal information – is considered necessary. The survey shows that embargo models are only viable in practice where they are implemented in a technically, legally and organisationally sound manner.

3.4.2 Tiered access / controlled release

Another frequently mentioned model for controlled openness is "tiered access." It allows different user groups to be granted different access rights to datasets, depending on the data or the type of use (see also Future of Privacy Forum, 2023; NIH n.d.; Borgman, 2012).

This model is particularly well known in medical research and biobanks, where a tiered system of rights and obligations has been established. In the survey, this model is widely considered to be practical – especially for collaborations with companies where not all data can be openly published (see also Fecher et al. 2015).

Essential requirements for tiered access:

- Clear access categories (public, consortium, internal, etc.),

- Technical access systems (e.g. role management, DOI logic),
- Standard contracts and legal terms of use,
- Documentation of use and prevention of misuse.

Examples of successful implementation can be found, among others, in the context of consortium research projects, with content worthy of protection. The combination of application requirements, objective-related use and documentation requirements was positively evaluated by companies (see also Tenopir et al., 2011).

The model is considered compatible if control is maintained. For companies, it is crucial that the model offers both transparency and protection – for example, through legally binding usage limits.

3.4.3 Licence models

The private sector survey clearly shows that licensing models play a central role in the acceptance of ORD. Companies are only willing to participate if there are precise rules governing what may be done with the published data (see also Thouvenin and Volz, 2024).

Licensing models offer a middle ground between complete disclosure and restrictive access. The following elements were mentioned particularly frequently:

- Exclusion of commercial use (e.g. CC BY-NC),
- Restriction of further processing,
- Obligation to name the author (e.g. CC BY),
- Context-specific conditions such as consortium affiliation or registration requirement.

Although Creative Commons (CC) licences are well known, there is uncertainty about their scope, especially in private sector contexts. Some companies prefer individually negotiated terms of use or sector-specific variants (see also Fecher et al. 2015; Future of Privacy Forum, 2023).

Modular licence components that can be flexibly adapted to different forms of cooperation were mentioned several times – e.g. publication for academic purposes only, access only with registration, or consortium-restricted reuse.

From the perspective of many companies, licensing is closely linked to issues of governance and infrastructure. Without accompanying contracts, technical access controls and clear responsibilities, the choice of licence often appears insufficient. HEIs have some catching up to do in this area – many have neither legal expertise nor suitable templates for collaborations (see also swissuniversities, 2021).

3.5 Practical examples and case studies

To illustrate cooperative approaches to dealing with ORD, several responses from the private sector survey were evaluated qualitatively. The following examples are not based on individual documented cases but were synthesised as abstract case vignettes from recurring patterns, free-text responses and structured information. The aim is to highlight practical scenarios and conditions under which companies are willing to engage in data sharing.

Case study A – Selective release with embargo period: A company agreed to publish anonymised data, but only six months after the end of the project. The release was made conditional on the data not being used for commercial purposes and being published under a CC-BY-NC licence. The internal legal department reviewed the final data release (see also Thouvenin and Volz, 2024; SPARC, n.d.).

Case study B – Consortium model with tiered access: A publicly funded consortium agreed on a tiered access system: Participating HEIs were given full access to the research data, while external requests had to be approved by a monitoring committee. Individual datasets were published via Zenodo subject to specific restrictions on use (see also Future of Privacy Forum, 2023; European Commission, 2018).

Case study C – Data release with a positive PR strategy: A medium-sized technology company supported the disclosure of aggregated project data as part of an open science campaign. The prerequisite was that the company be named in the project communication and that the released data are made available for internal use (see also Fecher et al., 2015; Borgman, 2012).

These fictitious synthetised scenarios show that, under certain conditions, a cooperative approach to ORD is also possible from a company perspective – for example, through clear legal frameworks, selective openness, transparent communication and the use of graduated protection mechanisms.

3.6 Distinction from shared data (definition and governance)

In the context of the private sector and HEIs surveys, repeated reference was made to the concept of "shared data" – i.e. data that is shared in collaborations but not made publicly available. This chapter systematically classifies the term and highlights its practical relevance and the current challenges in governance.

Shared data differs from ORD in that access to it is restricted: While ORD is intended to be accessible to the scientific community and the public, shared data remains within defined collaborations, such as between HEIs and companies or within research consortia. This shared data may be sensitive, confidential or economically relevant, which is why its use is subject to specific conditions.
A key feature of shared data is that access and use are always governed by contractual agreements. Shared data does not exist without a contractual basis – be it in the form of data release agreements, licence agreements, non-disclosure agreements (NDAs) or project-related appendixes to cooperation agreements. These agreements define access, purpose of use, disclosure, duration and protective measures, thus forming the legal basis for controlled data use.

The survey results show that shared data is more common in practice than fully open data releases. Companies use such models to work with HEIs on data-based issues without having to relinquish control rights or confidentiality. For their part, HEIs report usage scenarios in which data is made available on a project-specific basis or within closed networks.

Despite the practical relevance of shared data, challenges remain: Many collaborations are based on individually negotiated contracts, which leads to inconsistencies in governance. There is a lack of standardised templates, role models and institutional responsibilities. For the further development of data guidelines, it is therefore essential to recognise shared data as a separate category alongside ORD and to clearly anchor the contractual dimension.

Private sector perspective:

Companies are often cautious about ORD. Reasons for this include concerns about data sovereignty, potential reputational risks, regulatory requirements and the risk of unwanted reuse by competitors. At the same time, there is a high level of willingness to collaborate if institutional security, contractual clarity and tiered access models are in place. Hybrid or shared models are proven solutions here.

In practice, hybrid models represent an important bridge solution: They combine transparent terms of use with targeted access restrictions and offer both HEIs and companies a cooperative means between openness and confidentiality. Contractually defined, tiered access options and clear governance allow legal, ethical and economic requirements to be addressed in a balanced manner, thus leading to the goals pursued by ORD.

From the perspective of the stakeholders surveyed, it is clear that shared data requires a contractual basis. Without explicit regulations on access restrictions, use, disclosure and rights, there is a considerable risk of legal uncertainty and misunderstandings when dealing with shared data. Shared data always means a controlled form of cooperation – in practice, this always requires the conclusion of specific contracts, e.g. in the form of non-disclosure agreements (NDAs), data use agreements or cooperation agreements. The absence of such agreements contradicts the understanding of shared data as established in scientific practice and, in particular, in the context of public-private collaborations.

4 Analysis of the Feedback

4.1 Response overview and data quality

This chapter provides a quantitative overview of participation in the empirical survey, broken down by the two main target groups: HEIs and the private sector. The information is based on the overall data from the LimeSurvey system used and subsequent Excel exports.

A total of around 190 evaluable responses from HEIs' representatives and around 100 responses from the private sector were recorded. These are not institutional responses in the strict sense, but rather responses from individuals who have experience in cooperation or governance – often occupying functions in research services, data stewardship, technology transfer or department management.

A significant proportion of the questionnaires were not fully completed, particularly for the private sector. Nevertheless, even incomplete entries were evaluated in terms of content, as they often contained meaningful free-text information or selective response patterns. Early dropouts or selective non-response to specific questions provide important clues about obstacles, disinterest or comprehension problems.

The data is solid but cannot be considered statistically representative. However, it does reflect a broad spectrum of perspectives – particularly across different types of HEIs (universities, universities of applied sciences and arts, and universities of teacher education) and company sizes (SMEs, medium-sized companies, and a few large companies).

Typical response patterns can be observed, among others, along the following lines:

- HEIs with an active ORD strategy tend to provide complete and detailed feedback.
- Companies respond more selectively, with a clear tendency to be cautious when it comes to open questions;
- Dropouts often correlate with questions about legal frameworks or specific data disclosure.

Overall, it is clear that participation and data quality depend heavily on the context and function of the respondents. Nevertheless, the high number of qualitatively usable responses enables a well-founded evaluation with clear thematic clusters – even if no claim to representativeness is made.

4.2 Higher education institutions: Typical patterns, dropout behaviour, content focus

The analysis of the HEIs responses reveals a complex picture. A total of 193 questionnaires were started by HEIs' representatives, of which 23 were fully completed. This corresponds to a completion rate of about 12%. Numerous other responses contain partial answers with usable content, which were also included in the analysis.

Both complete and incomplete – but substantial – responses were taken into account in the analysis. The patterns were evaluated on the basis of a systematic cross-sectional review of the group structure (e.g. thematically structured sections) and the respective response frequency.

In terms of thematic focus areas, particularly high response rates were observed in the section "Information about your role" (28 participants). This section appears to have provided a low-threshold entry point. In the sections "Benefits of data from the private sector," "Success factors" and "Concerns in the higher education and business context," the number of responses was around 19 to 21 in each case. Here, clear assessments were given in some cases on motivation, challenges and current practice in dealing with data cooperation.

Medium to low response rates were seen in the sections "Organisational issues," "Specific measures," "Suggestions," "Research area" and "Business partner." These groups were answered by 16 to 17 respondents each. It was noticeable that universities of applied sciences and arts and universities of teacher education had more gaps – possibly due to limited human resources, a lack of role profiles or a lack of institutional guidelines.

In terms of content, repeated references to strategic ambiguities in dealing with so-called shared data constellations were observed, particularly in relation to ORD. The lack of governance structures, unclear responsibilities, a lack of technical resources and legal uncertainties were also mentioned several times. Particular reference was made to data protection issues, data release questions and institutional role definitions.

A comparison between the different types of HEIs reveals a clear discrepancy: universities tended to provide structured and comprehensive feedback. This often included specific references to the tools used, existing procedures and internally regulated processes. Universities of applied sciences and arts, on the other hand, provided heterogeneous responses, some lacked information on governance issues or data technology infrastructure. Universities of

teacher education were generally underrepresented in the survey. The received feedback was often brief or fragmentary.

The results show that the institutional conditions for the systematic implementation of ORD at Swiss HEIs vary greatly. Response patterns, dropout rates and response profiles indicate existing implementation barriers, unclear responsibilities and, in some cases, serious resource deficits.

These differences should be actively taken into account when developing practical guidelines. Graduated recommendations depending on the type of HEI, the use of modular templates and targeted funding instruments to strengthen governance structures at less well-equipped institutions are recommended.

4.3 Private sector: Participation rate, frequent objections, preferred conditions

The evaluation of feedback from the private sector shows an overall low participation rate in the survey. Although 106 company representatives started the survey, very few fully completed it. The dropout rate is thus significantly higher than for HEIs. Various reasons can be identified, such as limited thematic relevance for many organisations, uncertainties regarding data protection and legal framework conditions, and the lack of a clear internal mandate to address strategic research issues.

Despite the low number of completed responses, the partially completed questionnaires provide important insights into companies' attitudes towards ORD. The sections "Information about your role" (21 responses), "Opportunities and benefits of ORD" (14), "Incentives" (13) and "Concerns" (11) were particularly frequently addressed. The content of the responses indicates a predominantly cautious attitude towards ORD.

Several respondents expressed fundamental reservations about the disclosure of sensitive data. Potential business disadvantages, legal uncertainties and loss of control over data reuse are perceived as particularly critical. Comments included concerns about the disclosure of trade secrets, lack of contractual clarity and possible follow-up costs. The data suggests that many companies reject standardised disclosure procedures unless they are actively involved in decision-making processes.

A key problem is the conceptual vagueness surrounding ORD. Some feedback shows that the term is mistakenly associated with complete openness or even open-source software. These

misunderstandings make it difficult to discuss the topic objectively. More precise communication about the goal and scope of ORD therefore appears necessary (see also Borgman, 2012; Fecher et al., 2015).

Some companies are open to data sharing under certain conditions. Among other things, time-limited embargoes, progressive access concepts and clearly formulated licence conditions were mentioned. Such flexible arrangements offer the possibility of combining data protection interests with scientific openness. The survey results suggest that so-called hybrid models are already being applied informally – for example, through project-related data releases with selective access or delayed publication. These models could represent a link between scientific interest in knowledge and operational protection interests (see also European Commission, 2018; Thouvenin and Volz, 2024; Future of Privacy Forum, 2023).

A direct comparison with HEIs shows that the private sector is acting much more cautiously. While HEIs generally emphasise structural or organisational challenges, the private sector is primarily concerned with legal and economic risks. This underlines the need to consider both perspectives when developing guidelines.

The feedback shows that a greater participation of the private sector in ORD initiatives is conceivable under certain conditions: Firstly, through transparent and differentiated communication about the concept and objectives of ORD; secondly, through the active involvement of companies in governance issues; and finally, through case-by-case decisions on data sharing. Funding institutions could play a mediating role by integrating flexible models into their funding models and creating incentive systems that are practicable for both sides (see also SPARC, n.d.; OECD, 2021; swissuniversities, 2021).

4.4 Comparison of complete vs. incomplete responses

The analysis of response data shows clear differences between completed and incomplete questionnaires – both by HEIs and the private sector. Overall, fully completed questionnaires tend to come from institutions that either have clearly defined governance in the area of ORD or where ORD is already firmly established. These responses are characterised by a higher amount of specific information – for example, on responsibilities, technical procedures, existing guidelines or experience with corporate cooperation. In these cases, the free text fields were also used much more frequently to share practical challenges, strategic considerations or recommendations.

In contrast, incomplete responses are often characterised by selective answering behaviour. In the case of HEIs, responses were often discontinued after the first general sections, but in individual cases also on specific topics such as governance, contractual arrangements or technical measures. It is particularly striking that the section on collaboration agreements with the private sector was regularly omitted. This suggests that there is a lack of relevant experience or that the topic is not clearly defined internally. Questions on data sharing, role allocation and legal standards were also rarely answered in the incomplete questionnaires.

The proportion of incomplete responses is particularly high for the private sector. In many cases, the questionnaire was abandoned after just a few sections – often when the term ORD was explained. This suggests that ORD is not yet perceived as an operationally relevant issue in many companies or that there are no clear internal contact persons responsible for research-related data strategies. Companies were particularly cautious in their responses to questions relating to legal or data protection implications. The relevant topics were often skipped, which could indicate uncertainty or a lack of responsibility.

Another difference can be seen in the quality of the free-text responses: while fully completed questionnaires often mention specific tools, institutional regulations or coordinated procedures, the answers in incomplete questionnaires tend to remain general.
These patterns illustrate that the depth of engagement with ORD depends heavily on institutional maturity, thematic proximity and the clarity of internal processes. HEIs with established data management structures or strategic ORD anchoring provide differentiated feedback, while others show significant gaps. In the private sector, participation depends heavily on perceived risk, access to resources and prior knowledge of ORD content.

For the development of practical guidelines, this means that recommendations should be differentiated. While research-related organisations need specific tools for further development, less experiences actors need low-threshold support elements, exemplary role concepts and modular templates. The communication of key terms, the clarification of legal responsibilities and the inclusion of protection concerns are essential prerequisites for involving more cautious actors in ORD processes.

4.5 Interpretation and significance for guideline development

The systematic analysis of the surveys from HEIs and the private sector provides key insights for the development of practical guidelines for dealing with ORD in public-private

collaborations. Three overarching topics can be identified as particularly relevant: recurring requirements, structural barriers and identified good practices.

Frequently mentioned requirements include clear licensing models, differentiated access procedures (e.g. embargo periods, tiered access), and clearly defined responsibilities and roles. Both HEIs and companies emphasise the need for legal clarity, reliable standards and flexible protection mechanisms in order to implement ORD in a practicable and legally secure manner (see also Thouvenin and Volz, 2024; European Commission, 2018; Future of Privacy Forum, 2023). The desire for instruments to regulate use is particularly evident in the context of business, for example through selective releases, licensing options or temporary access restrictions (see also SPARC, n.d.; OECD, 2021).

Structural barriers mainly affect governance and institutional resources. Numerous HEIs do not have established responsibilities, legal advice, technical infrastructure or human resources for the systematic implementation of ORD (see also ETH Zurich, 2022; swissuniversities, 2021). Similar barriers are also evident for the private sector: The survey results indicate a frequent lack of institutional responsibility for research policy issues, limited internal expertise on data sharing and a high degree of uncertainty regarding legal implications (see also Tenopir et al., 2011; Borgman, 2012). These uncertainties mean that even when there is fundamental openness to ORD, concrete participation often fails to materialise.

At the same time, examples of good practice were also identified. Some HEIs reported on functioning support structures, such as the targeted use of data stewards, progressive access regulations, or the use of platforms such as DMPonline. On the private sector side, hybrid models have emerged that combine scientific openness with operational protection interests – for example, through delayed publication, selective access or contractually fixed usage scenarios (see also Future of Privacy Forum, 2023; Thouvenin and Volz, 2024). These examples show that practicable models already exist, but in practice they are often poorly documented and not systematically institutionalised.

For the development of guidelines, this means that differentiated, modular recommendations are needed that take into account different levels of maturity, institutional starting points and risk assessments (see also OECD, 2007; Harvard University, 2020). In addition to general guidance, concrete templates, decision trees, legally reviewed contract modules and recommendations for action should be provided for typical cooperation constellations. In addition, certain topics – such as data protection in hybrid projects, discipline-specific requirements, the role of technology transfer offices (TTOs) or governance in shared data contexts – should be

further explored in in-depth workshops or focus groups in order to develop viable and compatible solutions.

The development of guidelines should therefore not be limited to formal rules and regulations, but specifically promote processes of internal negotiation, confidence-building measures and realistic options for action. The aim is to enable both HEIs and companies to actively shape ORD – on the basis of clear rules, comprehensible protection mechanisms and institutionally anchored procedures (see also Wilkinson et al., 2016; UNESCO, 2021).

5 Strategic Incentive Systems

5.1 For higher education institutions: Bonuses, funding conditions, reputational benefits

The analysis of the survey shows that ORD has so far only been promoted to a limited extent by systematic incentive structures at many HEIs. Although there are isolated initiatives in individual cases – such as DMP training, project-related information or individual repository solutions – these often remain isolated measures without broad institutional support or strategic anchoring (cf. also Fecher et al., 2015; Tenopir et al., 2011).

In particular, there is a lack of formal mechanisms for recognising and promoting ORD-related achievements. Activities such as structured data release, the establishment of repositories or quality-assured data preparation are rarely taken into account in evaluation procedures, research reports or appointment procedures. Visibility in project overviews and the consideration of data citations in performance evaluations are also hardly established to date (cf. also Borgman, 2012; OECD, 2021; Wilkinson et al., 2016).

The feedback from the HEIs survey clearly shows that there is a considerable need for more effective incentive systems. Several suggestions have been made on how ORD activities could be better promoted and made more visible at the institutional level. These include, among others:

- The explicit consideration of ORD in qualification agreements, appointment procedures or third-party funding reports,
- Project-related bonuses or infrastructure cost subsidies to support data provision,
- Reputation-enhancing measures such as internal labels, inclusion in university rankings or visibility in funding databases (see also swissuniversities, 2021; ETH Zurich, 2022).

Measures that link ORD to existing HEI management tools are considered particularly effective – for example, through mandatory DMP workshops at the start of projects, standardised templates for data management or clear governance guidelines. These elements create commitment and enable the early integration of ORD-relevant decisions (see also Harvard University, 2020; UNESCO, 2021).

In contrast, formal disclosure obligations without accompanying support or recognition are considered to be less effective. In these cases, the impression is often created that additional

requirements are being imposed without institutional support, which can lead to frustration and low motivation to implement them.

Another key finding shows that decisions on ORD-relevant aspects at HEIs are often occurring late in the project cycle. When collaborating with the private sector, however, contracts have usually been negotiated before ORD-relevant aspects are discussed. As a result, opportunities for funding or strategic integration remain unexploited. Several responses indicate that HEIs need to be more proactive in initiating such decisions at an early stage – for example, through governance checkpoints, mandatory DMP submissions during the application phase, or targeted incentive systems during project preparation (see also Thouvenin and Volz, 2024; Future of Privacy Forum, 2023).

In summary, internal incentives are a key factor in embedding ORD in HEIs' practice. Without institutional recognition, financial support and strategic integration, much potential remains unexploited. For the development of effective guidelines, this means that recommendations for the integration of incentive systems are also necessary – tailored to the type of HEI, department and institutional requirements (see also OECD, 2007; SPARC, n.d.):

- HEIs should be given targeted support in developing ORD skills – for example, through training courses for researchers, templates for DMPs, clear role models (e.g. data stewards) and technical infrastructure.
- A central coordination office per institution can improve governance in data sharing and contractual issues.

5.2 For companies: General financial incentives, access to infrastructure, visibility

The analysis of the survey results shows that companies generally take a cautious approach to ORD – unless there are concrete advantages that compensate for the effort and risk involved in releasing data. The survey responses clearly show that financial, infrastructural or reputation-related incentives are key leverages for encouraging private sector participation in ORD initiatives (see also Thouvenin and Volz, 2024; Future of Privacy Forum, 2023).

General financial benefits, for example in the context of publicly co-financed projects or participation in government-funded innovation programmes, were mentioned particularly frequently. Such incentives are perceived as an important compensation for potential losses of protection or control (cf. European Commission, 2018). Similarly, privileged access to scientific infrastructure – such as repositories, secure data rooms or cloud platforms such as SWITCH or

BioMedIT – is considered an attractive argument for cooperation (cf. GA4GH, n.d.; ETH Zurich, 2022).

Another motive for the private sector is the visibility that can result from participation in ORD projects. This includes, for example, co-branding opportunities, institutional recognition in repositories or the award of a label such as "Trusted Open Collaboration." Such recognition formats can help to integrate ORD into companies strategies as a reputation-boosting element – provided they are not linked to disclosure obligations (cf. SPARC, n.d.; Harvard University, 2020).

Overall, incentives are not seen as a bonus, but as a basic prerequisite for participation in ORD initiatives. Companies expect not only financial benefits, but also legal protection and the opportunity to influence reuse and contextual information (cf. OECD, 2021; Data Act, European Commission, 2018). Involvement in governance processes – for example, through participation in policy development or access criteria – is also described as a confidence-building element (cf. Future of Privacy Forum, 2023).

A key finding of the survey is that ORD is only supported by companies if the model is differentiated, scalable and adapted to their specific conditions. Flexible publication scenarios are needed to respect protection interests, for example through tiered access models or embargo regulations (cf. also Borgman, 2012; Wilkinson et al., 2016). At the same time, the narrative surrounding ORD must be framed in such a way that it can be integrated into corporate innovation and cooperation strategies.

For the development of guidelines, this means that targeted incentive structures should not only aim at researchers, but also explicitly address the needs and motivations of the private sector. These include general financial incentives, infrastructural advantages, visibility in the funding context and legal clarity – representing integral components of a collaborative ORD ecosystem (see also swissuniversities, 2021; OECD, 2007).

Hybrid data models should be considered the standard solution for collaborations with the private sector, especially for sensitive or economically relevant data. These include:

- A combination of open access and access control (e.g. embargo models)
- Technical security and tiered role models for data access,
- Standardised contract modules for hybrid scenarios.

5.3 Proposals for combined models: "Open with protection components"

The analysis of the survey results shows that both HEIs and the private sector have a strong interest in flexible, combined models for handling ORD. Pure disclosure obligations are viewed critically, especially by the private sector, while hybrid approaches that combine openness with protection mechanisms are much more widely accepted.

Numerous responses from both target groups contain specific proposals for such combined models. These include tiered disclosure processes, selective releases, licence-based reuse, embargo periods, and access systems with application requirements or project-related controls. A common feature of these models is their modularity – they allow ORD to be implemented in a manner appropriate to the situation without general obligations.

Examples from the survey:

- **Embargo with subsequent release:** Research data initially remains internal to the project or not accessible, and is only published after a defined period of time or after the protection phase (e.g. patent application) has ended. This solution is considered to build trust (see also European Commission, 2018).
- **Data Use Agreements (DUAs) with post-classification:** Agreements in which the data category is reviewed after the end of the project, and – depending on the protection status – data are either released or remain restricted. The implementation is described as technically feasible but legally complex – standardised contract templates are required (cf. SPARC, n.d.; GA4GH, n.d.).
- **Tiered access:** Models with different access levels for different user groups, such as consortium partners, academic third parties or the public. Such models are particularly suitable for sensitive areas such as medical research, mobility or energy data. Often, only access to metadata is provided, while the raw data remains protected (cf. also Harvard University, 2020).

These models are viewed much more positively than full release requirements or mandatory disclosure. Three factors are crucial to their acceptance: trust in governance structures, technical safeguards for access control, and legal clarity regarding rights, obligations and protection options (see also OECD, 2007; ETH Zurich, 2022).

Example use case – "Mobility Data Cooperation Project":
An interdisciplinary research project between a university of applied sciences, a mobility service provider and a public innovation agency is investigating traffic flows in urban areas. The company provides aggregated GPS data. The DMP provides for a tiered release model:

- Research group: full access to pseudonymised raw data;
- Project partners: access to standardised evaluations;
- Public: Access to metadata via Zenodo, publication of selected, visualised final data after a 12-month embargo;
- Terms of use are regulated by a DUA; source citation and company attribution are mandatory for reuse.

This solution was evaluated positively during the course of the project: The company was able to protect its interests, the researchers were able to publish, and a scalable model for follow-up projects was created.

Implications for the guidelines:
For the development of guidelines, this means:

- Provision of concrete templates, case studies and decision-making aids for combined models,
- Description of different levels of cooperation – from bilateral projects to international consortia
- Inclusion of protection components (licensing, contextual information, citation requirements) as central elements for building trust,
- Recommending legally reviewed model contracts (e.g. for DUAs, access rights, post-classification) for structured implementation.

Combined models can thus help to systematically anchor ORD in research partnerships without jeopardising the participation of relevant actors through excessive disclosure requirements.

In addition, the potential loss of reputation due to misinterpretations of open data should also be addressed – for example, through clearly defined contextual information, licensing requirements or citation guidelines.

5.4 Technical levers: Compliance by design and data use tracking

In addition to legal and institutional measures, the survey also mentioned technical solutions that can contribute to the security, transparency and attractiveness of ORD. These solutions act indirectly as incentive systems by protecting interests, making reuse traceable and increasing the visibility of data provision (see also Fecher et al., 2015; Tenopir et al., 2011).

A key principle here is compliance by design, which means that legal requirements are integrated into technical systems and workflows from the outset, rather than being checked retrospectively (see also Wilkinson et al., 2016; Thouvenin and Volz, 2024). This allows standard processes to be automated and reduces the administrative burden on researchers.
Frequently mentioned technical tools include:

- **Automated licence assignment:** systems that suggest or mandatorily integrate suitable licence models based on data type, origin and usage context (e.g. CC BY, CC BY-NC) (cf. also SPARC, n.d.).
- **Tracking of data reuse:** Use of access counters, digital object identifiers (DOIs) or persistent URIs to record how often and by whom data sets are accessed or reused (see also Wilkinson et al., 2016; Harvard University, 2020).
- **Digital watermarks or fingerprinting:** Methods for marking data sets that enable traceability in the event of misuse or improper disclosure (cf. GA4GH, n.d.).
- **Linking to evaluation systems:** Integration of ORD activities into research evaluation and reputation systems, for example through ORCID profiles, institutional databases or integration into the DORA framework (cf. European Commission, 2018; swissuniversities, 2021).
- **Data governance standards in repositories:** Technical platforms should support access controls, metadata standards, version management and classifications to make usage secure and transparent (cf. EOSC SRIA, 2021; ETH Zurich, 2022).

In the surveys, these technical levers were described not only as a means of security, but also as catalysts for acceptance – especially on the part of companies. Systems that automate legal certainty or technically implement protection interests are perceived as confidence-building (see also Future of Privacy Forum, 2023).

Furthermore, such tools can serve as evidence of responsible data practices and thus contribute to enhancing reputation. However, this requires that they are easy to use, institutionally anchored and accompanied by clear guidelines for researchers (cf. EPFL, n.d.; NIH, n.d.).

For guideline development, this means that recommendations for technical safeguards should not only be abstract, but also formulated in a concrete, application-oriented manner. Templates for access logs, licence mapping tools, or standardised tracking mechanisms could help make ORD more practicable and secure, especially in collaboration projects involving the private sector.

6 Governance Recommendations for ORD

6.1 Clearly defined role models and responsibilities

The evaluation of the survey clearly shows that clear responsibilities and transparent role allocations are crucial for the successful implementation of ORD in public-private collaborations (cf. Fecher et al., 2015; Borgman, 2012). Many institutions currently lack defined contact persons, structured responsibilities and institutionally anchored processes particularly with regard to data classification, release, licensing and risk assessment (see also ETH Zurich, 2022; EOSC SRIA, 2021).

Based on the survey responses, it is recommended that specific role models be established to cover central functions in data management. These include, among others:

- **Data stewards**, who act as an interface between research, administration and external partners and provide operational support in data curation and release (cf. European Commission, 2018).
- **Research services** (e.g. grants offices) that provide support in the creation of DMPs, compliance with funding conditions and questions regarding project management (cf. SNSF, n.d.).
- **IT services**, which are responsible for technical infrastructures, access control and platform integration.
- **Libraries** that can offer expertise in metadata standards, repositories and licensing issues (cf. EPFL, n.d.; University of Basel, n.d.).
- **Legal departments** that provide advice on data protection, contracts and legal reuse (cf. Thouvenin and Volz, 2024; FADP).

A clear definition of roles within the HEIs not only contributes to internal efficiency, but also creates reliability for external private partners. According to the survey, the private sector requests stable, identifiable contact persons for data and rights issues. At the same time, many companies stated that they themselves did not have defined responsibilities for research data management internally – which further underlines the importance of clearly regulated governance structures on the part of HEIs (cf. Future of Privacy Forum, 2023).

The survey responses also mentioned several times that escalation channels for conflicts relating to ORD – for example, in cases of uncertainty about data release or protection concerns – were often not available or not documented. Responsibility for risk assessments, for example

in the case of sensitive data, is also often not assigned institutionally (cf. NIH, n.d.; HIPAA, 1996).

Overall, the development and implementation of binding role models is a key prerequisite for the successful strategic and operational implementation of ORD. Existing models from IT security or research integrity (e.g. data protection officers, information security officers) could serve as a model for structured responsibilities in the data context (cf. ISO 23494-1:2023). Recommendations should therefore show how HEIs can specifically establish and communicate governance structures – including clear decision-making logic, escalation channels and interfaces with external partners.

6.2 Development of templates and contracts (cooperation with ORD components)

A key finding of the meta-study is that many challenges in public-private collaborations can be attributed to unclear or missing contractual provisions. The survey responses made it clear that uncertainties surrounding property rights, data sharing, access rights and reuse are often not explicitly addressed – even though they are highly relevant for both sides (cf. Future of Privacy Forum, 2023; European Commission, 2018).

On this basis, this chapter recommends the development of standardised but flexibly adaptable templates for research and cooperation agreements that contain ORD-relevant components. The aim is to create legal clarity, make scope for action transparent and address potential conflicts as early as the project preparation stage, and before a collaboration agreement is concluded (cf. Thouvenin and Volz, 2024; OECD, 2021).

The most important elements of such templates include:

- **Clarification of data ownership and rights to derivatives**, especially in projects with mixed data sources;
- **Definition of confidentiality and access rights**, including technical and organisational protection measures;
- **Agreement on embargo periods and publication rights** in order to reconcile research interests and economic protection interests (cf. Tenopir et al., 2011);
- **Mechanisms for reuse**, such as tiered access systems or licence agreements with third parties (cf. GA4GH, n.d.);
- **Regulations for review and approval processes** that are coordinated with the project planning.

Two examples of contract modules**:**

1. **Access licence:**
   "The parties grant each other a non-exclusive, time-limited right to use the research data generated during the project. Use is limited to scientific purposes within the scope of the project objective. Disclosure to third parties requires the written consent of all data owners."
2. **Embargo clause with review clause:**
   "The research data shall be published no earlier than six months after the end of the project. Before the end of the embargo period, a review shall be carried out by the project's internal data governance unit, which shall make a final decision on release."

The surveys emphasised in particular on long-term access options (e.g. five years after the end of the project) and the role of internal release loops and external review mechanisms (see also NIH, n.d.; HIPAA, 1996). HEIs reported positive experiences with hybrid contract models when ORD aspects were agreed upon with partners at an early stage. These experiences should be incorporated into the development of practical templates.

At the same time, standardised templates should be designed in a modular fashion. Successful implementation requires configurable building blocks that can be adapted to specific protection needs, funding logic and forms of cooperation. Companies see such modular solutions as a prerequisite for participation, particularly regarding control rights, approval mechanisms and reputation protection (cf. Wilbanks and Friend, 2016).

The meta-study provides the legal basis for this, for example with regard to data protection (GDPR, FADP), licensing models (cf. SPARC, n.d.), international recommendations (e.g. OECD, 2007, UNESCO, 2021) and discipline-specific standards (cf. ISO 23494-1:2023). Implementation supports derived from this should include:

- Toolkits for licence selection (e.g. Creative Commons, Custom Licences),
- Checklists for drafting contracts for ORD components,
- Training materials for research services and legal departments.

Overall, contracts should be seen not as obstacles but as instruments for safeguarding common interests. Successful ORD collaborations are based on transparent, early coordination of

legal framework conditions – and this is precisely where institutional templates can make a significant contribution.

6.3 Integration into institutional policies (data governance, research funding)

Sustainable implementation of ORD requires more than technical solutions or individual funding measures – it must be structurally embedded in institutional regulations (cf. Borgman, 2012; Wilkinson et al., 2016). This chapter examines the extent to which HEIs already have formalised policies on data sharing and identifies potential gaps. The survey findings show that the integration of ORD into internal strategies, research regulations or governance guidelines is still scarce and often not implemented systematically (see also Tenopir et al., 2011; ETH Zurich, 2022).

Although many HEIs have general research regulations or guidelines on data processing, ORD-specific elements – such as the handling of sensitive data, licensing or data classification – are rarely regulated in a binding manner. In many places, there is also a lack of clear responsibilities for release decisions, especially in public-private partnerships. Decisions on data release are often based on individual assessments or the approval of individual managers, which leads to inconsistencies and increases legal risks (see also Thouvenin and Volz, 2024; FADP).

Another problem is the formal use of DMPs. Although these are created in many projects, their content is rarely checked or reused institutionally. They therefore serve more as *a funding formality* than as a strategic management tool. There is considerable potential here to establish DMPs as a binding governance tool – for example, through standardised checkpoints, as is common in financial matters (see also European Commission, 2018; SPARC, n.d.).

In addition, there is a lack of internal control mechanisms for implementing and complying with existing policies. Escalation channels for conflict cases – for example, in the event of disagreement about data release in collaborations – are rarely defined. Monitoring instruments for tracking ORD implementations are also generally lacking.

The survey also shows that HEIs are interested in external supports such as templates, tools or co-creation platforms to further develop their own regulations. In some cases, initial approaches to integrating shared data into data-governance policies already exist (cf. OECD, 2021), but these have not yet been widely implemented or systematically operationalised.

From this perspective, a three-stage approach to embedding ORD in institutional policies is recommended:

1. **Strategic level**: Inclusion of ORD objectives in mission statements and research strategies.
2. **Operational level**: Integration into DMP requirements, funding instruments and contract review processes.
3. **Control and escalation channel**: Establishment of institutional procedures for quality assurance and conflict resolution in dealing with open data.

In the long term, the effectiveness of ORD will only be guaranteed if the underlying processes – from data classification and licensing to publication – are governed by reliable, legally secure and clearly communicated policies (see also NIH, n.d.). The development of such institutional regulations should therefore be understood as an integral part of further guideline work and actively promoted.

6.4 National synergies: Model proposals for uniform governance structures

The implementation of ORD in Switzerland currently faces a number of decentralised challenges. HEIs develop their own policies, cooperation projects are negotiated individually, and technical standards vary greatly (see also ETH Zurich, 2022). This fragmentation not only makes comparability difficult, but also hinders relationships between institutions – especially when private partners are involved. On this basis, the current chapter proposes coordinated approaches at the national level to provide guidance and establish common standards (see also OECD, 2021; European Commission, 2018).

The survey results show that many respondents express a strong need for uniform support – for example, through centralised templates, coordinated DMP requirements or shared repositories. It is repeatedly emphasised that not only the technical but also the legal and organisational framework conditions should be coordinated at national level. A key objective is to avoid redundancies and reduce uncertainties – for example, in the handling of sensitive data or cooperation agreements – through established model solutions.
The following model proposals were specifically mentioned:

- **Concretisation of a national ORD roadmap for the involvement of the private sector**, with the aim of defining strategic objectives, responsibilities and timelines for all stakeholders.

- **Establishment of interoperable, trustworthy repositories** with differentiated access levels, ideally via central offerings such as ORD@CH or in cooperation with SWITCH.
- **Introduction of standardised DMP templates** that take into account both discipline-specific and cross-sector requirements.
- **Creation of comprehensive contract and licence templates**, for example for projects involving the private sector, in which embargo periods, access restrictions or context requirements can be clearly regulated.

In addition, it would be desirable to establish a national community platform modelled on the British JISC initiative. This could serve not only as a knowledge hub, but also as a training, review and matching platform for ORD-related issues. Coordination could be carried out by existing organisations such as swissuniversities, Innosuisse or the Swiss Data Science Community.

The survey responses particularly emphasise the desire for platform solutions that combine technical access, legal clarity and governance support. This is the only way to create a framework of trust in which cooperation can be conducted with clear rules and a common understanding of terms.

The development of such national standards requires coordinated cooperation between HEIs, funding institutions, political actors and private sector partners. Implementation projects should not only be initiated top-down, but also informed by bottom-up experiences. Only through this mutual learning process can truly practicable, compatible and sustainable governance structures for ORD in Switzerland be created.

7 Conclusion: ORD between Aspiration and Reality

7.1 Status

The evaluation of the survey and supplementary literature analyses present a nuanced picture of the current state of ORD in public-private collaborations in Switzerland.

At the institutional level, awareness of the importance of ORD has grown – especially at universities and research-intensive institutions, where initial structures are in place, for example in the form of data management plans (DMPs), advisory centres or repositories. At the same time, there is still a lack of binding policies, clearly defined responsibilities and standardised templates for cooperation agreements in many places.

In practice, it is apparent that ORD is not implemented consistently in many public-private collaborations, but is negotiated on a case-by-case basis. The exchange of economically relevant or confidential data often takes the form of so-called shared data – i.e. within limited access circles and excluding the public. Such shared models are usually based on contractual arrangements that formally define the access, use and transfer of data. Without such a contractual basis, shared data is not legally enforceable.

However, the survey results show that many of these contracts are individually designed and not systematically anchored in institutions. This makes it difficult to reproduce, trace and reuse the shared data. At the same time, it is clear that there is a high willingness to cooperate when the framework conditions are clear. Modular licensing models, graduated access solutions and institutional contact persons are perceived as particularly supportive.

In practice, ORD is therefore highly dependent on discipline, type of institution, resources and form of cooperation. There are no irresolvable contradictions between openness and the need for protection – what is crucial is a viable legal and organisational framework.

7.2 What is possible – What is not (yet) feasible?

The survey results present a nuanced picture of the feasibility of ORD in public-private collaborations. Some elements are already established or have been piloted at the institutional level, while others are considered difficult to implement. The development of guidelines must therefore search for a realistic balance between ambition and feasibility.

Realistically feasible – if supportive framework conditions are in place: Several HEIs report successful approaches to gradually integrating ORD instruments into everyday research. Among others, the following were mentioned:

- Structured DMPs, supported by templates and advice,
- Use of technical repositories with embargo functions,
- Internal classification systems (e.g. for personal or economically sensitive data),
- Creation of roles such as data stewards or specialised services.

However, these measures are resource-intensive and require targeted support, clear governance structures and, where necessary, legal expertise.

Not yet feasible – systemic challenges and acceptance issues:
Despite the orientation towards conceptual frameworks such as the FAIR principles (see also Wilkinson et al., 2016), specific obstacles remain:

- Many private sector partners reject a general disclosure obligation without protective mechanisms.
- Standardised licensing models are hardly feasible in sectors requiring protection.
- The establishment of governance standards across institutions is particularly difficult for universities of applied sciences with limited resources.

Empirical studies show that a lack of support and uncertainties inhibit data sharing (cf. Tenopir et al., 2011), not openness per se.

Protective components as a prerequisite:
The survey emphasises that ORD only works where differentiated protection and control mechanisms exist. The guidelines should therefore:

- Describe specific scenarios for opening up access (e.g. embargoes, tiered access),
- Explicitly address economic interests and legal aspects,
- Take into account the need for practical, adaptable templates (cf. also FPF, 2025).

7.3 Prospects for a follow-up project (e.g. guidelines from shared data to ORD)

The results of the meta-study and the present document show that there is still a high demand for practical guidance on ORD in public-private collaborations. Although initial approaches exist, systematic, differentiated and accepted guidelines are largely lacking.

A follow-up project should support the transition from "shared data" or hybrid models to ORD, with concrete decision-making logic, modular templates and governance proposals. The focus is not on a static state, but on a process of gradual openness.

Dimensions addressed in a follow-up project:

- **Actor-specific guidelines:** Universities, universities of applied sciences and companies need their own recommendations, tailored to their roles, capacities and legal obligations (see also Borgman, 2012).
- **Data types and protection requirements:** A distinction must be made between personal, proprietary and open data – also with regard to licensing and risk assessment (see also FPF, 2025).
- **Forms of cooperation:** Whether publicly funded, mixed funding or contractually commissioned – the requirements for governance, transparency and confidentiality differ (see also Tenopir et al., 2011).
- **Implementation supports:** In addition to technical templates, decision-making supports such as checklists, flowcharts and standardised review elements are needed. One focus could be on pilot projects at universities of applied sciences in cooperation with SMEs.

Long-term perspective: Such a follow-up project could help to provide legally viable, institutionally compatible and technically secure solutions – tailored to the private sector context. The establishment of an open, nationally compatible platform for knowledge exchange and review (similar to JISC or EOSC) should also be examined.

Platform for knowledge exchange and review (similar to JISC or EOSC) should be examined.

Recommended next steps	Time frame	Stakeholders	Relevant topics
1. Piloting ORD governance models at universities of applied sciences	2025–2026	Universities of applied sciences, SMEs, swissuniversities	Clarification of roles, cooperation agreements, protection mechanisms
2. Development of configurable contract templates	From Q4/2025	Legal services, SNSF, technology transfer offices	Licensing, embargo, access

Recommended next steps	Time frame	Stakeholders	Relevant topics
3. Establishment of a national review board for ORD cooperation	2026	swissuniversities, Innosuisse, UZH, ETH	Quality assurance, support for researchers, best practices
4. Creation of a modular toolkit for institutional policies	Q1–Q3/2026	Universities, swissuniversities, data steward network	Data governance, policy integration, training
5. Co-creation platform for use cases and scenarios	From 2026 onwards	Universities, companies, open science communities	Incentive systems, role models, use cases

7.4 Recommendations to swissuniversities and stakeholders

The findings gained during the project underscore the strategic importance of ORD for the further development of the research landscape in Switzerland – particularly in the interaction between HEIs and private sector partners.

ORD is much more than a technical or formal requirement: It acts as a catalyst for transparency, reproducibility and innovation **–** the core values of open science and the basis for trust-based collaboration. At the same time, ORD not only affects the academic sector, but also poses a challenge for applied research, knowledge and technology transfer offices, and funding institutions.

The survey results and case studies show that many of the tried-and-tested models – such as graduated access rights, combined licensing or standardised contract modules – have high transfer potential beyond individual institutions or projects. They can be adapted, further developed and systematically scaled – for example through:

- Pilot projects at universities of applied sciences with a strong application focus,
- Integration into funding logic and project review processes (e.g. SNSF, Innosuisse),
- Or through national coordination initiatives such as ORD@CH*.*

Another strategic potential lies in the modularisation of governance approaches: instead of general obligations, a tiered model enables differentiated solutions depending on the type of data, protection requirements and form of cooperation. Such structures create trust and can

contribute to the standardisation of transitions from shared data to ORD – without jeopardising the autonomy of the actors involved.

In the long term, the project can help to remove the term ORD from the realm of pure compliance and establish it as an integral part of good scientific practice and a culture of cooperative innovation, thereby winning over the private sector. This requires legal clarity, technical feasibility, institutional anchoring on the part of HEIs – and strategic learning spaces in which practical solutions can be developed jointly.

8 Appendix

8.1 Glossary of key terms

Term	Definition
Compliance by design	An approach in which legal requirements are already integrated into technical systems and work processes.
Data management plan (DMP)	Document that describes how research data is collected, stored, secured, shared and archived during and after a project.
Data steward	Specialist who supports researchers in data management, particularly in the documentation, classification and release of research data.
Data Use Agreement (DUA)	Contractual agreement on the use of data by third parties, including provisions on purpose limitation, access and rights of use.
DORA	San Francisco Declaration on Research Assessment; initiative to reform the criteria for evaluating scientific performance, with a focus on data publications, among other things.
Embargo	Temporary restriction on the publication of research data; often used to protect interests (e.g. patents, publications).
Governance	Set of rules that defines responsibilities, processes and decision-making structures in data management within institutions or collaborations.
Hybrid models	Combined data access models that lie between open access (ORD) and restricted availability. They regulate data access and use via contractual agreements, such as embargoes, licence models or tiered access concepts – particularly in public-private collaborations.
Licence model	Legal regulation governing the conditions under which data may be reused, e.g. Creative Commons (CC BY, CC BY-NC).
Metadata	Descriptive information about datasets (e.g. content, collection method, creation date) that facilitates their findability and reuse.
Open research data (ORD)	Research data that is made publicly accessible and reusable under defined conditions, usually in compliance with legal and technical standards.
Repository	Digital platform for the structured storage, publication and archiving of research data.

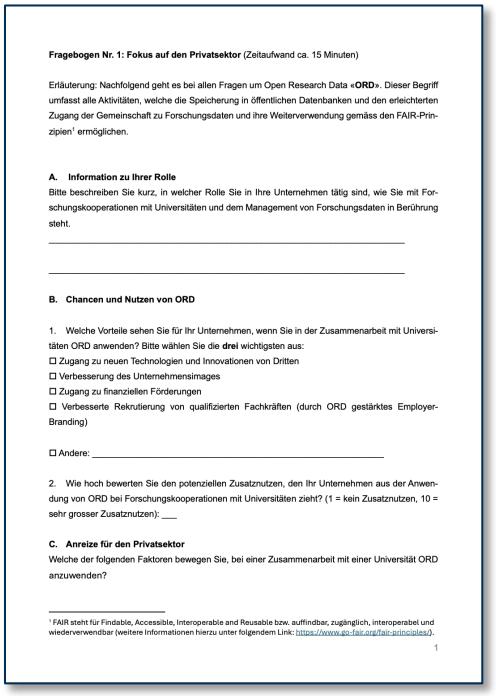
Shared data	Data that is shared on a project-specific basis or within defined partnerships but is not publicly accessible; often used in collaborations between higher education institutions and private sector partners.
SWITCHdrive	Cloud storage service for Swiss higher education institutions for collaborative data use with high data protection standards.
Tiered access	Access model with tiered authorisation levels, e.g. full access for project partners, restricted access for third parties, public metadata.

8.2 Questionnaires

The questionnaires used are listed below in German (for the private sector and higher education institutions, full versions in each case).

They were also sent out in Italian, French and English; participants could select their preferred language.

Private sector questionnaire:



Fragebogen Nr. 1: Fokus auf den Privatsektor (Zeitaufwand ca. 15 Minuten)

Erläuterung: Nachfolgend geht es bei allen Fragen um Open Research Data «**ORD**». Dieser Begriff umfasst alle Aktivitäten, welche die Speicherung in öffentlichen Datenbanken und den erleichterten Zugang der Gemeinschaft zu Forschungsdaten und ihre Weiterverwendung gemäss den FAIR-Prinzipien[1] ermöglichen.

A. Information zu Ihrer Rolle

Bitte beschreiben Sie kurz, in welcher Rolle Sie in Ihre Unternehmen tätig sind, wie Sie mit Forschungskooperationen mit Universitäten und dem Management von Forschungsdaten in Berührung steht.

_____

_____

B. Chancen und Nutzen von ORD

1. Welche Vorteile sehen Sie für Ihr Unternehmen, wenn Sie in der Zusammenarbeit mit Universitäten ORD anwenden? Bitte wählen Sie die **drei** wichtigsten aus:

☐ Zugang zu neuen Technologien und Innovationen von Dritten
☐ Verbesserung des Unternehmensimages
☐ Zugang zu finanziellen Förderungen
☐ Verbesserte Rekrutierung von qualifizierten Fachkräften (durch ORD gestärktes Employer-Branding)

☐ Andere: _____

2. Wie hoch bewerten Sie den potenziellen Zusatznutzen, den Ihr Unternehmen aus der Anwendung von ORD bei Forschungskooperationen mit Universitäten zieht? (1 = kein Zusatznutzen, 10 = sehr grosser Zusatznutzen): ___

C. Anreize für den Privatsektor

Welche der folgenden Faktoren bewegen Sie, bei einer Zusammenarbeit mit einer Universität ORD anzuwenden?

[1] FAIR steht für Findable, Accessible, Interoperable and Reusable bzw. auffindbar, zugänglich, interoperabel und wiederverwendbar (weitere Informationen hierzu unter folgendem Link: https://www.go-fair.org/fair-principles/).

1

☐ Exklusive Rechte an bestimmten Forschungsergebnissen (während Forschungsdaten nach ORD verfügbar gemacht werden)
☐ Anwendung von ORD einzig auf bestimmte Forschungsdaten, während andere Daten proprietär bleiben.
☐ Zugang zu finanziellen Förderungen
☐ Positive öffentliche Wahrnehmung
☐ Andere:

_____

_____

D. Bedenken bezüglich ORD

Welche Bedenken hat Ihr Unternehmen bezüglich ORD? Bitte wählen Sie die **drei** wichtigsten aus:

☐ Preisgabe von Betriebsgeheimnissen
☐ rechtliche Risiken und Unsicherheiten
☐ mögliche Kostenfolgen
☐ mögliche zeitliche Verzögerungen
☐ mangelndes Vertrauen gegenüber Universitäten und Hochschulen
☐ unklare Zuständigkeiten

Andere:

_____

_____

2

Questionnaire for higher education institutions:

Fragebogen Nr. 2: Fokus auf den akademischen Sektor (Zeitaufwand ca. 15 Minuten)

Erläuterung:
Nachfolgend geht es bei allen Fragen um Open Research Data «**ORD**». Dieser Begriff umfasst alle Aktivitäten, welche die Speicherung in öffentlichen Datenbanken und den erleichterten Zugang der Gemeinschaft zu Forschungsdaten und ihre Weiterverwendung gemäss den FAIR-Prinzipien[1] ermöglichen.
Die Fragen beziehen sich auf Partner aus dem «**Privatsektor**». Dieser Begriff umfasst private Unternehmen, die einen kommerziellen Zweck verfolgen. Ebenso werden Unternehmen im Eigentum bzw. unter der Kontrolle öffentlicher Rechtsträger als zum Privatsektor gehörig verstanden, sofern diese überwiegend einen kommerziellen Zweck verfolgen. Ausgenommen hiervon sind non-profit Organisationen.

A. Information zu Ihrer Rolle

Bitte beschreiben Sie kurz, in welcher Rolle Sie an Ihrer Universität tätig sind, wie Sie mit Forschungskooperationen mit dem Privatsektor und dem Management von Forschungsdaten in Berührung steht.

_____

_____

B. Nutzen von Daten aus dem Privatsektor

1. Wie hoch bewerten Sie den Nutzen des Zugangs zu Daten aus dem Privatsektor für Ihre Forschung? (1 = kein Nutzen, 10 = sehr grosser Nutzen): _____

2. Welchen Nutzen ziehen Sie aus dem Zugang zu Daten aus dem Privatsektor?
   Wählen Sie die **drei** wichtigsten aus:

☐ Zugang zu exklusiv bei den Privaten vorhandenen Daten
☐ Zugang zu aufwändig generierten Daten
☐ Zugang zu praxisrelevanten Daten und Fragestellungen

☐ Andere: _____

[1] FAIR steht für Findable, Accessible, Interoperable and Reusable bzw. auffindbar, zugänglich, interoperabel und wiederverwendbar (weitere Informationen hierzu unter folgendem Link: https://www.go-fair.org/fair-principles/).

3

3. Wie hoch schätzen Sie den Zusatznutzen von ORD mit dem Privatsektor ein?
   (1 = kein Zusatznutzen, 10 = sehr grosser Zusatznutzen): _____

4. Wie lässt sich ORD bei der Zusammenarbeit mit dem Privatsektor umsetzen?
   Welche Grenzen sehen Sie?

_____

_____

_____

C. Erfolgsfaktoren und Anreize

Welche Leistungen kann Ihre Universität anbieten, um ORD in der Zusammenarbeit mit dem Privatsektor zu fördern? (Mehrfachauswahl möglich):

☐ Zugang zu bestimmten Forschungsergebnissen
☐ massgeschneiderte Lösungen für die Gestaltung von ORD (z.B. Herauslösung bestimmter Daten aus ORD; Anreizsysteme sollen gewährleisten, dass Forschende wissenschaftliche Anerkennung erhalten für ihre Leistungen im Zusammenhang mit ORD)
☐ Zugang zu Forschungsinfrastrukturen
☐ Andere: _____

D. Bedenken Universität

Welche Bedenken haben Sie gegenüber ORD bei der Zusammenarbeit mit dem Privatsektor? Bitte wählen Sie die **drei** wichtigsten aus:

☐ Einhaltung rechtlicher und technischer Rahmenbedingungen
☐ Die Verwendungsmöglichkeiten einschränkende Pflichten aus Lizenzbedingungen der Drittprovider, von denen (Teile der) in der Kooperation verwendeten Daten bezogen wurden
☐ Ablehnende Haltung des privaten Forschungspartners (falls ja, bitte führen Sie aus, welche Gründe der Forschungspartner hierfür anführt)

_____

_____

☐ Andere: _____

4

E. Bedenken Privatsektor

Welche Bedenken denken Sie hat der Privatsektor gegenüber ORD bei der Zusammenarbeit mit einer Universität? Bitte wählen Sie die **drei** wichtigsten aus:

☐ Preisgabe von Betriebsgeheimnissen
☐ rechtliche Risiken und Unsicherheiten
☐ mögliche Kostenfolgen
☐ mögliche zeitliche Verzögerungen
☐ mangelndes Vertrauen gegenüber Universitäten und Hochschulen
☐ unklare Zuständigkeiten

Andere: _____

F. Organisatorische Fragen

Welche Einheiten in den Hochschulen treffen den Entscheid, ORD in der Zusammenarbeit mit dem Privatsektor anzuwenden bzw. darauf zu verzichten?

☐ Technology Transfer Office
☐ Professor
☐ Head of Research Group
☐ Departement / Institut
☐ Library
☐ _____

Welche Richtlinien in Bezug auf die Verpflichtung zu ORD bestehen an Ihrer Hochschule?

_____

_____

Wenn Sie möchten, können Sie nachfolgend ein Beispiel beschreiben, wo Forschungsdaten aus der Zusammenarbeit mit einem Unternehmen nach ORD zur Verfügung gestellt wurden.

_____

_____

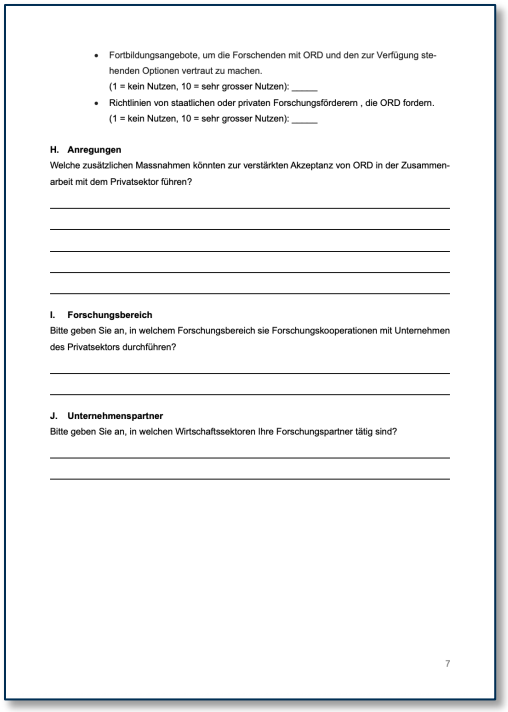
5

G. Spezifische Massnahmen

Wie beurteilen Sie die Wirksamkeit der nachfolgenden Massnahmen, um die Akzeptanz von ORD in Kooperationen mit Unternehmen des Privatsektors zu begünstigen?

- Universitätsinterne Vorgaben sollen vorschreiben, dass Forschungsdaten wenn immer möglich zeitgleich mit einer Publikation im Sinne von ORD verfügbar gemacht werden müssen. Ausnahmen von diesem Grundsatz (z.B. ein Embargo) sollen nur aufgrund von in den Vorgaben festgelegten Gründen zulässig sein.
  (1 = kein Nutzen, 10 = sehr grosser Nutzen): _____
- Die Forschungsförderung soll auch Data-Management-Arbeiten als anrechenbare Kosten mit abdecken, damit Forscher einen Anreiz haben, diesen Aufwand zu übernehmen.
  (1 = kein Nutzen, 10 = sehr grosser Nutzen): _____
- Die Forschungsförderung soll auch für Verlagskosten (article processing charges, ACP, oder open access fees) bereitstellen, um so Einwände der Verlage gegen ORD zu vermeiden.
  (1 = kein Nutzen, 10 = sehr grosser Nutzen): _____
- Universitätsinterne Vorgaben sollen vorschreiben, dass ein Data Management Plan in einer frühen Phase eines Forschungsprojektes erstellt werden muss, um mehr Augenmerk auf das Thema Daten zu lenken.
  (1 = kein Nutzen, 10 = sehr grosser Nutzen): _____
- Forschende sollen Unterstützung (zum Beispiel *Data Stewardship*) erhalten beim Data Management (und den damit verbundenen Themen wie der Veröffentlichung nach FAIR-Principles, der Auswahl von geeigneten Repositories, von Lizenzbestimmungen, dem Aufbereiten von Daten für die Veröffentlichung, dem Erstellen eines «data availability statement» als Bestandteil der Publikation).
  (1 = kein Nutzen, 10 = sehr grosser Nutzen): _____
- Die Universität soll die notwendige Infrastruktur und Data Science Ressourcen für ORD zur Verfügung stellen.
  (1 = kein Nutzen, 10 = sehr grosser Nutzen): _____
- massgeschneiderte Lösungen für die Gestaltung von ORD (z.B. Herauslösung bestimmter Daten aus ORD; Anreizsysteme sollen gewährleisten, dass Forschende wissenschaftliche Anerkennung erhalten für ihre Leistungen im Zusammenhang mit der ORD).
  (1 = kein Nutzen, 10 = sehr grosser Nutzen): _____
- Daten-Zitierung soll als Bestandteil der Forschungsintegrität verstärkt werden, so wenn von Dritten generierte Forschungsdaten in ein neues Forschungsvorhaben einfliessen.
  (1 = kein Nutzen, 10 = sehr grosser Nutzen): _____

6



- Fortbildungsangebote, um die Forschenden mit ORD und den zur Verfügung stehenden Optionen vertraut zu machen.
  (1 = kein Nutzen, 10 = sehr grosser Nutzen): _____
- Richtlinien von staatlichen oder privaten Forschungsförderern , die ORD fordern.
  (1 = kein Nutzen, 10 = sehr grosser Nutzen): _____

H. Anregungen

Welche zusätzlichen Massnahmen könnten zur verstärkten Akzeptanz von ORD in der Zusammenarbeit mit dem Privatsektor führen?

I. Forschungsbereich

Bitte geben Sie an, in welchem Forschungsbereich sie Forschungskooperationen mit Unternehmen des Privatsektors durchführen?

J. Unternehmenspartner

Bitte geben Sie an, in welchen Wirtschaftssektoren Ihre Forschungspartner tätig sind?

7

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