

Sustaining Openness: Research Data, Infrastructure and Institutional Commitment

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Abstract. This case study outlines how Vrije Universiteit Amsterdam developed integrated RDM services through researcher profiling, cultural-change strategies, community building, and tailored infrastructures. The programme produced sustainable support structures and institutional policies aligned with national and international standards, positioning the university for continued advancement in research data stewardship.

Keywords: Research Data Management, Cultural Change, Research Support Services.

1 Introduction

Over the past decade, Research Data Management (RDM) has become a central focus within the research ecosystem. Increasing expectations from funders (Toga et al., 2025), the proliferation of data-intensive research practices, and a growing recognition of the long-term value of effective data stewardship have together created a favourable environment for institutions to develop structured RDM support (Perrier et al., 2017). Universities have increasingly acknowledged that RDM is not merely a technical task but a strategic responsibility that touches on research quality, transparency, reproducibility, and compliance (Basalti et al., 2025). As a result, they have brought together key internal stakeholders to create integrated support structures. Academic libraries have assumed a prominent position within this landscape (Dube, 2025; Sheikh et al., 2025). Building on established expertise in information management, knowledge organisation, open scholarship infrastructures, and the stewardship of scholarly outputs, libraries have often acted as the natural locus for RDM policy development and service coordination. Their ability to translate abstract principles into operational services has placed them at the centre of institutional RDM strategies. At Vrije Universiteit (VU) Amsterdam, these developments culminated in the creation of a dedicated strategic programme charged with evaluating existing practices, aligning with evolving national policies, and building an organisational infrastructure capable of supporting diverse research communities. Through targeted investments, the programme expanded institutional exper-

tise, developed researcher training, and produced the university's Research and Software Management Policy. This paper reports on this institutional trajectory, focusing on how the programme was organised, how services were developed and adopted, and how temporary structures were transitioned into a sustained RDM service ecosystem.

2 Exposition of the Investigation

Programme Structure and Collaborative approach. From the outset, it was evident that the success of the initiative depended on cross institutional collaboration. Although the University Library served as the central coordinating unit, effective support required the engagement of multiple service domains. Accordingly, a programme organisation was established comprising a programme manager from Academic Affairs, representatives from IT for Research, staff from the University Library, and support staff from the Faculty of Behavioural and Movement Sciences. This interdisciplinary structure ensured that technical, organisational, and disciplinary perspectives were integrated into decision making. Identifying the programme's target audience required careful examination of research practices across the university. While "researchers" might appear to be a single group, interviews across all faculties revealed substantial variation in workflows, data types, collaboration patterns, and sensitivity requirements. To capture this diversity, the programme conducted extensive semi structured interviews focusing on three themes:

1. the technical complexity of research activities,
2. modes of collaboration within and outside the university, and
3. specific requirements regarding security, privacy, and data sensitivity.

These interviews created an empirical foundation for aligning service development with institutional realities.

Underlying Theoretical Model. Because behavioural and cultural change in research environments is challenging—even when required by funders—the programme sought conceptual guidance to maximise the likelihood of successful implementation. Nosek's Strategy for Cultural Change (Nosek, n.d.) provided such a framework, emphasising the interdependence of five pillars ranging from policy and infrastructural enablement to community dynamics, incentives, and peer-to-peer support (Fig. 1). The programme adopted this framework to ensure that technical infrastructure was introduced in concert with communication, training, community building, and policy development. The FAIR principles served as a complementary paradigm, offering a shared vocabulary and conceptual anchor for discussions with researchers and support staff about high quality data stewardship (Wilkinson et al., 2016).

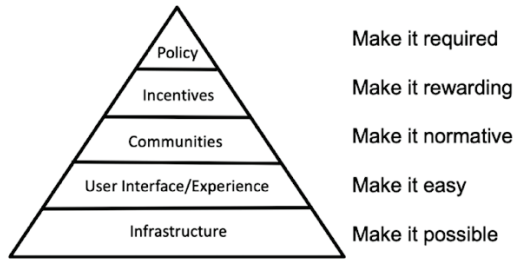


Fig. 1. Nosek's model of cultural change.

3 Results

Defining Researchers' Archetypes. The interviews revealed recurring patterns in research practices, enabling the programme to develop four archetypal researcher profiles: the quantitative human centred researcher, the empirical researcher of complex systems, the system development researcher, and the qualitative classical researcher (Fig. 2).

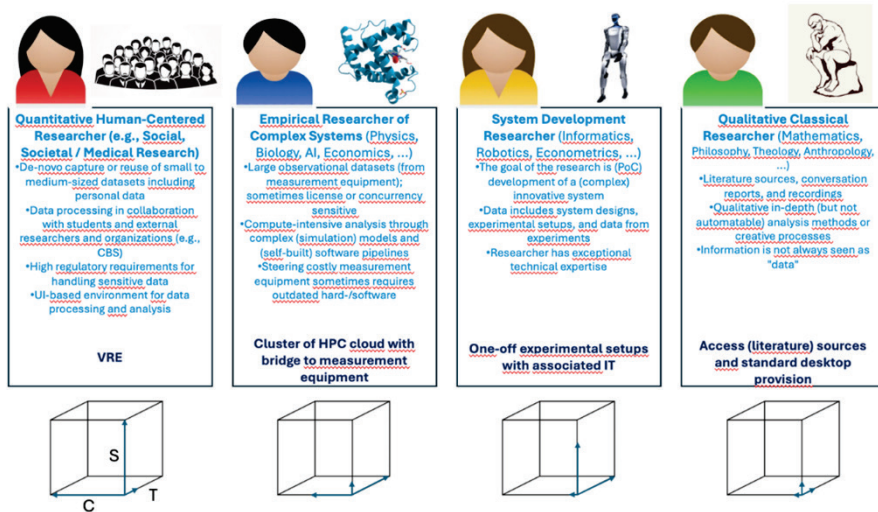


Fig. 2. Establishment of 4 types of generalized researchers.

The research practice of researchers is mapped on three axes, Security and Sensitivity of data (S), Cooperation and collaboration (C), and technical set up (T).

Although intentionally broad, this typology proved instrumental for assessing whether services and policies addressed the full spectrum of institutional research needs, and while these archetypes served as well, they might not translate to other research institutions and need adaptation to specific needs. These archetypes also facilitated productive conversations with researchers, particularly those concerned that university wide

RDM systems might not accommodate discipline specific workflows. For example, while a qualitative classical researcher might be well served by generalist platforms such as the Open Science Framework (OSF), researchers working with complex, data intensive systems required specialised solutions such as Integrated Rule Oriented Data System (iRODS) based environments.

Delivering the First Results, Fast. To build credibility and demonstrate capability, the programme committed to delivering a visible result within its first three months. The chosen milestone—a university wide data management planning tool—served as an immediate practical aid for researchers and as a starting point for community building. Its release created momentum, enabled outreach, and allowed the programme to begin communicating not only organisational updates but also tangible support opportunities.

Hub and Spoke Model. The Hub-and-Spoke model has long been recognised as an effective structure for organising networks and is typically associated with supplier–customer relationships (Behnken, 2004). Drawing on this concept, the programme adapted the model to suit the needs of RDM support at the VU. To keep investments in support capacity manageable and to maintain trusted, personal connections with researchers, the programme focused on building a central hub of specialised expertise within the university services, complemented by spokes embedded within faculties. The hub provides strategic and tactical guidance, while the spokes offer operational support close to the day-to-day practices of researchers. This arrangement aligns with the university’s non-hierarchical support culture and accommodates the diverse sizes and disciplinary needs of individual faculties, allowing each spoke to organise support in a manner that fits local contexts. The network further relies on specialised contributions from Research IT, Legal, Project Control, and Technology Transfer, ensuring that faculty-based support staff are backed by a broad range of institutional expertise.

RDM Support Desk. To provide researchers with predictable and efficient support and reduce the time burden of finding the right point of entry for support, the programme created a central RDM Support Desk. Research Data Stewards triaged incoming requests, provided answers when possible, and coordinated contributions from specialist units when needed. This resulted in a streamlined process for researchers, reducing the burden of navigating institutional structures. Over a four-year period, support desk usage increased significantly, underscoring both the demand for guidance and the visibility of the service (Fig. 3.).

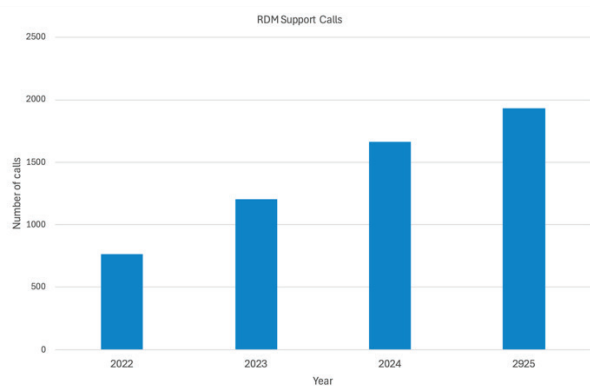


Fig. 3. Number of RDM support calls 2022-2025.

Building Community and Expanding Training. Consistent with Nosek’s model, creating a community was essential to make good RDM practice normative rather than exceptional. Cultural change is more easily adopted when researchers recognise shared challenges and can learn from each other’s experiences. As a next step, we therefore initiated monthly meet-ups for the emerging RDM community, coordinated by a community manager who actively built relationships with interested groups within faculties. These individuals acted as conduits for communication, early adopters within research groups, and organisers of discussions between the programme team and departments. Initially, the community manager curated the programme for these sessions, but as the community grew more confident, responsibility for shaping the content was gradually transferred to its members, giving them agency in their own development and strengthening ownership over RDM practices.

Scaling up and Sustaining Services. With foundational services and community structures in place, the programme shifted its focus to long term sustainability. Using an adapted research data lifecycle (Vrije Universiteit Amsterdam, n.d.-b), the programme mapped all services to both the lifecycle stages, and the previously identified researcher archetypes. This revealed gaps and guided the development of additional services, resulting in a broad offer of RDM tooling for researchers to use (Fig. 4).

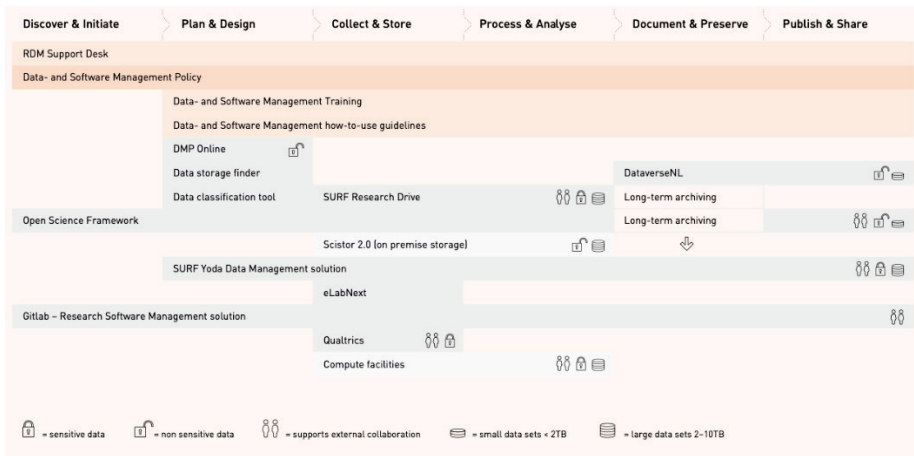


Fig. 4. Overview of developed RDM services and support.

As an example, two major infrastructure components—Research Drive (a more generalized, easy to use system) and YoDa (an iRODS based environment, suited for more specific use cases) - were implemented to accommodate the diverse needs of researchers. Adoption metrics showed strong uptake in user numbers (not shown), active research projects (Fig. 5.a), and data volume (Fig. 5.b), demonstrating the value of differentiated rather than uniform solutions.

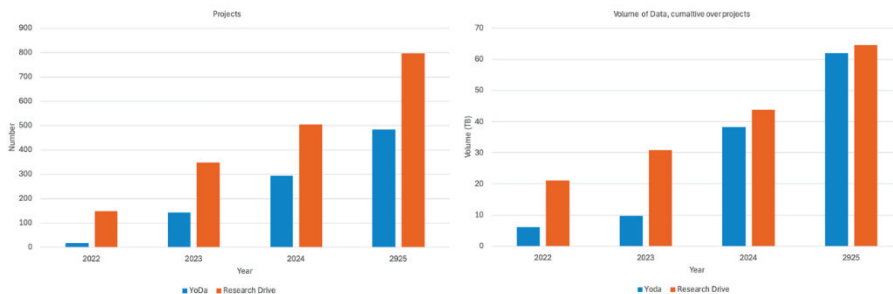


Fig. 5. Growth of research projects (a) and volume (b) in RDM tools.

These developments created the basis for conversations with university leadership about structural funding. A five-year plan was drafted emphasising financial sustainability, digital sovereignty, and the gradual reduction of dependency on commercial platforms. Preference was given to open source and community driven solutions whenever feasible.

Drafting and Taking Responsibility for Policy. The programme's efforts culminated in the drafting of the university's Research Data Management Policy in 2021, subsequently expanded in 2024 to incorporate Research Software Management (Vrije Universiteit Amsterdam, n.d.-a). This policy served to translate high-level institutional

commitments into actionable expectations for researchers, ensuring that operational practice remained aligned with both national standards and international developments in research assessment and open scholarship. The policy explicitly integrated requirements arising from the Netherlands Standard Evaluation Protocol and reflected institutional commitments to international frameworks such as the San Francisco Declaration on Research Assessment (DORA), the Coalition for Advancing Research Assessment (CoARA), and the Barcelona Declaration on Open Research Information. By consolidating these diverse principles within a single institutional framework, the university established a coherent policy foundation that faculties could further contextualize in their own discipline-specific policies. This tiered approach ensured local (as in on a faculty level) relevance without compromising alignment with national and international standards, offering researchers a clear and consistent route to compliance.

4 Conclusion and Discussion

This case study has demonstrated how Vrije Universiteit Amsterdam developed and institutionalised research data support services by combining strategic organisation, cross-institutional collaboration, conceptual frameworks, and community-driven engagement. The initial creation of researcher archetypes allowed the programme to recognise and respond to disciplinary diversity, building trust with researchers who were concerned about one-size-fits-all solutions. Grounding the programme in Nosek's cultural change model ensured that technical enablement, policy development, and community formation progressed in tandem rather than in isolation.

Over time, the library emerged as a trusted and credible partner in research support, ultimately playing a leading role in drafting the university's RDM and software policies. While significant progress has been made, challenges remain—particularly in designing meaningful incentive structures that recognise high-quality RDM practices. Early steps, such as proposals to include datasets within PhD theses, indicate momentum but also reveal continuing questions about assessment, peer review, and assessment.

Future Steps and emerging Opportunities. The programme's work has positioned the library as a centre of excellence for research support and created pathways for engagement with adjacent areas such as citizen science, open research information, and team science. These developments present opportunities to further professionalise and reward the contributions of research support staff. Looking ahead, the priority will be to consolidate and evolve services within a rapidly changing research environment: increasing visibility and adoption across faculties, strengthening digital sovereignty through open and community-driven infrastructure, and exploring AI-based enhancements that reduce administrative burden on researchers and support compliance. Together, these efforts will contribute to a resilient and future-oriented RDM ecosystem, aligned with evolving research practices and broader open science ambitions.

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Received: March 23, 2026

Reviewed: April 15, 2026

Finally Accepted: May 03, 2026