RDA PDS-IG Data stewardship organisational models survey

Analysis of responses to open questions

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This document contains analysis of the responses to open-ended questions in the survey conducted by the RDA Interest Group on Professionalising Data Stewardship, in late 2021. Further details of the survey are available on the RDA website here and an offline copy of the survey is available at: https://doi.org/10.5281/zenodo.6665146

The relevant questions were on the topics shown in Table 1 ('question themes').
Responses were independently coded, firstly to identify themes specific to the question. Table 1 provides links to further question-specific themes.

Question themes	Response themes
Relevant current roles	Data stewardship core roles
	Related professional advisory roles
	Support coordination roles
	Research roles
Engagement factors	Policy compliance
	Resourcing for support
	Scope of support offered
	Visibility, outreach, trust, and embedding in research practice ('VOTER'?)
Contributors to success	Support for data production
	Skills development
	Recognition of good practice
	Data tools provision
	Effective communication
Barriers to adoption	Lack of incentive/credit and reward
	Unmet research support needs

	Gaps in coordination of support
	Engage with internal stakeholders
Lessons from experience	Build concrete tools and services
	Embed data stewardship in teaching and training
	Engage with external stakeholders
	Coordinate across the organisation
	Communicate using effective methods
	Drive and monitor improvements

Q10 - Relevant current roles

Does your service have any other relevant roles beyond those defined above? (for each one please also indicate associated job titles)

Themes	Codes
Data stewardship core roles	Research data manager
	Research software engineer
	Digital archivist/ Data librarian
	Data engineer
	Data scientist
Related professional advisory roles	Data privacy/ GDPR advisor
	Information professional
	Ethics advisor
	Metadata specialist
	User services specialist
	Social media / communications specialist
Support coordination roles	Project manager
	Infrastructure / Systems manager
	Service manager

	Lab coordinator/ Business manager
	Librarian/ Archivist
Research roles	Research assistant
	Research scientist

ResponseId	Q10	code
Response ID	Does your service have any other relevant roles beyond those defined above? (for each one please also indicate associated job titles)	
R_28HWl2tqIoClm9u	Project Manager,Infrastructure Manager	Project manager Infrastructure manager Service manager
R_2EIS9AUQm4RnAV3	Programmers maintaining research infrastructures,Data Managers who archive data provided to us by scientists	Research software engineer Digital archivist Research data manager
R_yX7PrqbBogeyOKR	Research Assistant	Researcher
R_2E9NIOZcSppyRRJ	none	
R_3Pk6dJLAJCAX8uo	none	
R_3kMqksUS5OR2Uq9	none	
R_27OjEd5cq32Judf	Informator,Programists	Librarian Research software engineer
R_3IaCgd2JyjYW0bG	Still an unstructured and immature service	
R_3JlQODagILEU9FV	Lab Coordinator,Data Engineer,Data Scientist	Coordination role
R_BV3eztJxEogf71f	First line support for privacy/GDPR related questions	GDPR advisory role
R_1faexnjGGW9a7YU	Privacy Coordinator because research is often done with (sensitive) personal data	GDPR advisory role
R_UaQptIG0lkK4Iy5	Data Steward that is a new term of position since 2020	Novelty of roles

R_3HSMRDA8Ia6W1j3	development of software for data management	Research software engineer
R_3n7LJRgzExeFKDp	Research Software Engineer	Research software engineer
R_TebvrwXwXT4rYhr	Involved in actual data collection, sensor maintenance and data processing. This experience is very beneficial for the more traditional RDM work.	Research participation (capability)
R_1flyl67o3kKE0hJ	Data brokering	Data brokering (capability)
R_247afmfNVx8vlCM	Data Manager,Data Scientist	Data manager Data scientist
R_1GxLdyuRCbbLtJh	In the university yes, but not based at the libraries. Though we do also have a digital preservation unit responsible for digital asset management and repository technology.	Digital archivist
R_1NslQE5mjsfGuBa	Records and Archives Staff (digital preservation and sentencing)	Digital archivist
R_1hBfdmldHgLc5Bz	Definition and implementation of the disciplinary FAIR framework (standards and interoperable tools). Researchers,IT Engineers The services provided go well beyond providing a repository or (linked) catalogues for accessing the data: advanced services for discovering, accessing and combining data stored at CDS, in observatory archives or in other astronomical data services. Researchers,Documentalists,IT Engineers	Data discovery, Data reuse Researcher Information professional IT engineer Research
R_3KHeV7Sc3i6fFrt	don't know	
R_32Rw1uG27L30c0w	no	
R_2V9DuP0VIzx0cdZ	Metadata management=Metadata Manager,Metadata Specialist. Long-term archiving=Long-Term Archive Manager. Security=System Operations Manager,Information Technology Specialist. Data Center Applications=Information Technology Specialist Data Center Services: data center services manager User Services: user services manager, user services specialist Data publication: project scientist, information scientist, research research scientist	Metadata specialist. Digital archivist System operations manager IT specialist. Services manager User services specialist Researcher Information scientist
R_3h44pXasQdibRJz	no	
R_pmGlpMah08gZGhj	Software Architect	Software engineer
R_3nMYff4	no	

oUs40Fxn		
R_33dMKr6Nd06z3aa	We train data science novices while providing data wrangling/advising services to the whole campus. The DataSquad model is growing into an open source approach (kind of like Data Carpentries) to help those who provide data services with broad support. It's meant to increase access to answers and consultation on research data needs (any data needs, really) - especially for those at institutions who do not have sufficient staff or resources to have the support in-house.	Trainer (Open source training model?) Data scientist
R_D94rop1HRmrv0fn	Web/Social media Manager	Social media manager
R_2CdAWzPWAdMnDs6	Research Software Engineer,Research Business Manager	Software engineer Business manager

Q17 - Engagement factors

What are the main factors that influence your service's ability to engage with research data producers?

Themes	Codes
Policy compliance	Funder data policy
	Journal data policy
	Institutional data policy
	Ease of implementation of recommendations/policies
Resourcing for support	Funding
	Capacity/ competence availability
	Senior management support
Scope of support offered	Data value/quality assurance
	Open licensing
	metadata/standards/ interoperability
	Integration with related support functions, e.g. HR
	Cross-lifecycle support
	Information literacy training

	Domain-specific support
Visibility, outreach, trust, and embedding in research practice	Service visibility
(VOTER)	Centralisation of support
	Researcher engagement with RDM/ FAIR
	Embedding/ experience in research
	Proactive user engagement
	Trust in service provided
	Sector leadership
	User review

ResponseId	Q17	codes
Response ID	What are the main factors that influence your service's ability to engage with research data producers?	
R_28HWl2tqIoClm9u	Funder data policy and associated workflows, End-journal requirements for citable data resources underpinning papers, Being visibly seen as active, engaged members of the research domains that we support	Funder policy Journal policy Service visibility Researcher engagement with service/ RDM
R_2rGaQLx4KFdcg5T	Time and willingness of data producers to engage with service	Researcher engagement with service/ RDM
R_x31NyLAYiPRqSsN	Time and capacity	Capacity
R_2f9edl2Kyt7qIYN	Researchers knowing the service exists,Time,Resources	Service visibility Capacity Funding
R_2ElS9AUQm4RnAV3	Domain specificity of our service and domain experts who are ex-researchers	Domain-specificity Embedding/ experience in research
R_yX7PrqbBogeyOKR	Data quality checking	Support with data quality
R_1F2gMT9p7lpG0Ni	Relevance of the data to the community served,Review by user representatives,Quality of the data,Open	Domain relevance Service user review

	license,Data not published elsewhere	Open licensing Data value/quality
R_1f407TTmMU0XTvF	Metadata/data standards	Support with metadata/standards Cross-lifecycle support
R_z3hz8TQOabaoQnf	Researchers looking for solutions to their data needs in different stages of their project,Researchers needing to comply with funding guidelines	Funder policy
R_2E9NIOZcSppyRRJ	Information literacy courses	Information literacy training provision
R_3Pk6dJLAJCAX8uo	Researchers' awareness of data management and need of it	Researcher engagement with service/ RDM
R_3kMqksUS5OR2Uq9	Scientific research culture hinders change and thus compliance	Researcher engagement with service/ RDM
R_2rJy5ivrdqkdnc2	Transparency of who to contact for services, what repositories are available, what best practices exist, and so on. Our institution is very "siloed" (it's a large, multidisciplinary research laboratory), so centralizing information so researchers find what/who they need is essential	Service visibility Centralised institutional support
R_sFIXx91BSZ8cACJ	Resourcing and staffing levels	Capacity/ competence availability Funding
R_27OjEd5cq32Judf	Integrity with institutional employee system	Human resource system integration
R_3IaCgd2JyjYW0bG	(Lack of) time to manage research data management	Capacity/ competence availability
R_2xRl2XXWIMVYRgx	We are constrained by the number of available work hours for outreach, curation, engagement and training. As a global service, with more staff we could expand engagement to more data producers.	Capacity/ competence availability
R_3JlQODagILEU9FV	Daily interactions with active research staff	Engagement with researchers
R_BV3eztJxEogf71f	Capacity of the team,Lack of RDM policies,Knowledge level	Capacity/ competence availability Institutional policies
R_1DqeGf3hkL9voLV	(Under)staffing,Lack of knowledge about our services in the research community,Lack of resources/tool available to researchers	Capacity Funding Service visibility
R_Z9s0UMtIiIQjbnb	Researchers have enough time and funding,Positive attitude towards FAIR data,A trained data steward	Capacity Funding Research culture

		Competences
R_1faexnjGGW9a7YU	Awareness and trust in the service provided	Service visibility Trustworthy service
R_UaQptIG0lkK4Iy5	Lack of good infrastructure	Trustworthy service
R_3iUNJpu2yoYbTVB	Time and suitable staff to carry out these activities	Capacity Competences
R_3kkdOpxg2Ea9bCV	Visibility	Service visibility
R_2xVIySXa2AKeu8h	Knowledge of researchers situation	Engagement with researchers
R_3F3dIr4O7ck3rYO	Our personnel are also scientists so collaborate actively,Our funding depends on our leadership in the data arena	Domain-specific support Engagement with researchers Sector leadership
R_3HSMRDA8Ia6W1j3	Usability of provided tools and resources that should be fast and easy to use for researchers	Service usability
R_3n7LJRgzExeFKDp	Resources	Resourcing
R_WeblURPkt0efuX7	Lack of resources makes us somewhat careful, because service needs are huge.	Capacity Funding
R_1F3WlcDelj9wxYX	Community engagement,Support of community activities,Solicitation of data from individuals	Engagement with researchers Researcher engagement with service/ RDM
R_1GxLdyuRCbbLtJh	Librarians have a direct connection with departments and researchers. And we build trust from the curation services related to publishing data in our institutional data repository so they come to us for other RDM issues.	Engagement with researchers Trustworthy service Researcher engagement with service/ RDM
R_2A10UL5a6aRDq2V	Interoperability	Interoperability (support with?)
R_DUffQgMZbMtoMmd	Researcher time and service staffing resource	Capacity Funding Researcher engagement with service/ RDM
R_1NslQE5mjsfGuBa	Communication,Researcher buy-in,Resourcing,Expertise,Training,Infrastructure, Policy	Capacity Funding Researcher engagement with service/ RDM Policy
R_1jP44AtR1qHAd2Z	Personnel,Time	Capacity Funding
R_242zumdH7VXGVW9	We can communicate ideas and recommendations to program managers, but are not part of the formal	Engagement with researchers

	discussions.	
R_2alF9t04iDuEKYy	Be convinced that open science and open data are necessary,Work with researchers frequently to know the needs	Engagement with researchers Researcher engagement with service/ RDM
R_1hBfdmIdHgLc5Bz	Quality of the services provided e.g. data and metadata curation, functionalities provided,Relevance of the services and content to the community's and research data producers' needs	Trustworthy service Support with metadata/standards Engagement with researchers
R_1jZi6DANACpdhly	Sufficient staff,Accessibility and awareness of the service,Ease of implementation of recommendations	Capacity Service visibility Ease of implementation
R_3KHeV7Sc3i6fFrt	Staff numbers e.g. currently only one person, part-time	Capacity
R_32Rw1uG27L30c0w	Request and demand by data producers	Engagement with researchers Researcher engagement with service/ RDM
R_1mQlpzrjbBxtaqJ	Cultural resistance to accept that research data are a scientific output and should be afforded the same value and effort as all other parts of the scientific process.	Research culture Researcher engagement with service/ RDM
R_2DUCzAgbrVJQMjO	Researchers disengaging from RDM due its complexity and lack of Data Steward FTE support	Capacity Researcher engagement with service/ RDM
R_2V9DuP0VIzx0cdZ	Relevance and quality of the data	Data value/quality
R_3OdL8ntQrb9i4Ty	Support from management e.g. spreading the word that the service is available, making researchers understand the new protocols	Senior management support Service visibility
R_T7QLbIexQev8Vtn	Getting into seminars & finding events where we can speak to a range of researchers from Principal Investigators to PhD students	Service visibility Engagement with researchers
R_pmGlpMah08gZGhj	Dissemination of our research support services	Service visibility
R_1daBdjwXoIyvC17	Reliable research data infrastructure e.g. repositories, platforms, storage spaces etc.,Provision of systematic training for research data creators,Provision of robust a consultancy and review support,The lack of senior management engagement and understanding on research stewardship matters	Trustworthy service Competences availability Senior management support Researcher engagement with service/ RDM
R_2TmXrTdcQm5mJny	Time, awareness, willingness to work with us	Capacity Service visibility Researcher engagement with service/ RDM

R_33dMKr6Nd06z3aa	Lack of awareness or appreciation for what a DMP entails and what it means to curate their materials among researchers	Researcher engagement with service/ RDM
R_D94rop1HRmrv0fn	Our reputation and certification as a Trustworthy repository and service,Commitment by University Research Administrators to RDM infrastructure and support	Senior management support Trustworthy service
R_3n8mXQyOokEcsBg	Outreach issues e.g. marketing	Service visibility
R_3kOIIcCpvjW3ezK	Capacity, capability, collaboration and funding	Capacity Funding Competences availability Engagement with researchers Researcher engagement with service/ RDM
R_2CdAWzPWAdMnDs6	Centrally positioned in the Library,Close ties with wider open research and open access services,Long standing team and services provide credibility,Actively engaged in advocacy and outreach to research and data generating community	Centralised institutional support Integration with research support Trustworthy service Engagement with researchers
R_3Hi7pUepMAXtsqX	Service advocacy via email, website, social media and training	Service visibility
R_1MYYrbqQuwiwGOO	Awareness	Service visibility
R_W3yKjkfjPbXheKd	Lack of engagement and awareness of solutions and support available,Lack of willingness to engage early enough in the research lifecycle,Desire for quick answers that involve no work	Service visibility Researcher engagement with service/ RDM
R_2DOfxZVGbcd5zad	Capacity and resources	Capacity Funding Competences availability

Q26- Contributors to success

What successful methods/approaches has your service used to engage with research data producers?

Themes	Codes
Support for data production	Whole lifecycle support/ 1:1 support
	Participation in research project governance

	Grant application support
	DMP support/ policy implementation
	Support for standards development
	Support for data publishing, archiving, curation
Skills development	Doctoral training
	Information literacy
	Awareness training
	Training fellowships
Recognition of good practice	Offer badges for skills acquisition
	Recruit researchers as champions/ ambassadors
	Build reputation for data/service utility, quality, trust
Data tools provision	Database provision
	Data standards implementation
	Co-design of tools
Effective communication	Community networking/workshops
	Using institutional channels
	Surveys- open, targeted
	Participation in research, scholarly communication
	Senior management advocacy
	Make service visible, promoting benefits and guidance

ResponseId	Q26	
Response ID	What successful methods/approaches has your service used to engage with research data producers?	

R_28HWl2tqIoClm9u	Participation in PhD training events,Engagement with data providers to develop data standards and practices from initial data collection to final archive dissemination (all parts need joining up to ensure that the requirements of all parties are met),Delivery of data tools that build on developed data standards and community buy-in,Regular attendance and engagement at community conferences,Provide community research infrastructure to aid use of data,Source 3rd party data to meet archive user requirements	Doctoral training Standards development Data tools provision Service support/outreach
R_2rGaQLx4KFdcg5T	Mandating DMPs for projects which allows sight of the research to then provide the services	DMP policy
R_x31NyLAYiPRqSsN	Training,Workshops,Digital badges	Training and badging Community networking/workshops
R_2EIS9AUQm4RnAV3	Participation in projects and grant writing,Participation in community meetings,Informal communication,Showing the benefit of DM in terms of efficiency	Grant application support Community networking/ workshops Benefits promotion
R_yX7PrqbBogeyOKR	Data publishing and repository by journals	Support for data publishing
R_1F2gMT9p7lpG0Ni	Reputation for high-quality data and high-quality services	Building reputation on data/service quality
R_1f407TTmMU0XTvF	Through membership in research project boards,Through engagement in domain standard development	Participation in research project governance Standards development
R_z3hz8TQOabaoQnf	Monthly meetings and get togethers,Shared Training Sessions,Institutional Communication Channels	Community networking/ workshops Using institutional channels
R_2E9NIOZcSppyRRJ	Information literacy courses	Training- info literacy
R_3lrdiii1eQ83eki	Dedicated databases	Database provision
R_3Pk6dJLAJCAX8uo	not applicable	-
R_3kMqksUS5OR2Uq9	None yet as we are in the starting-up phase of this data stewardship body in the faculty	-
R_2rJy5ivrdqkdnc2	A monthly meeting called Data Access Council that's a forum for presentations and discussions related to data and that anyone can attend	Community networking/ workshops
R_3IaCgd2	Still have to find the key for a successful approach to	-

JyjYW0bG	support research data management	
R_2xRl2XXWIMVYRgx	Developing features that are directly useful to researchers through many years working with them,Data producer needs identified through one-on-one support,Targeted funded projects with specific user groups,In-person training workshops,Open surveys,Surveys of targeted users with specific experience and knowledge,It can take many years to build trust, interest and use of a new service.	Service utility and trustworthiness 1:1 support Community networking/ workshops Surveys- open, targeted
R_3JlQODagILEU9FV	Local event attendance,Consultation on grants and consortia,Actively reading and discussing research outputs	Community networking/ workshops Participation in scholarly communication
R_1DqeGf3hkL9voLV	Training for users,Awareness of data management practices and readily available advice,Adoption by senior management is a key factor in uptake of the above	Awareness training Senior management support
R_Z9s0UMtIiIQjbnb	To do as much unburdening as possible with a outreaching approach	Service support/outreach
R_UaQptIG0lkK4Iy5	Use friendly DMP producing system like Data Steward Wizard	DMP support
R_2xVIySXa2AKeu8h	We contact all the researchers who are awarded grants from the major funders and offer help with DMPs	DMP support
R_3F3dIr4O7ck3rYO	Active scientific collaboration	Participation in research
R_3HSMRDA8Ia6W1j3	We developed a tools to publish Covid-19 data into [XXX] repositories. We directly contacted hospitals and made submission for them as use cases. After publication of the tool, other research communities in other countries contacted us to use the tool. We pitched our idea/prototypes for DM platform to other institutes and some of them were interested and decided to help us with the development of the tool as use cases.	Support for data publishing Co-design of tools Data tools provision
R_3n7LJRgzExeFKDp	Number of papers	
R_WeblURPkt0efuX7	DOI service for data repositories of the university,Long-term preservation archive,DMP commenting service	Support for data publishing Support for archiving/curation
R_1F3WlcDelj9wxYX	Community curation that engages publication authors directly in FAIR-sharing,The online curation tool Canto,Promoting benefits of community curation like for example increased dissemination, increased visibility, better understanding of data, more reuse of data Mainly explaining benefits, providing tools to make data curation easy, personal contact close to publication date (timely).	Data tools provision Visibility of support Benefits promotion

R_1flyl67o3kKE0hJ	Active tracking of project development for researchers connected to our infrastructure	Service support/outreach
R_1GxLdyuRCbbLtJh	Word of mouth	Visibility of support
R_2A10UL5a6aRDq2V	FAIR Data Point	Data tools provision
R_DUffQgMZbMtoMmd	Mandatory DMPs for students,Mandatory RDM training,Mediated deposit and removing administrative burden from data producers	DMP policy Training policy Service support/outreach Benefits promotion/ advocacy
R_1NslQE5mjsfGuBa	Networking,Creation of key services	Community networking/ workshops
R_1jP44AtR1qHAd2Z	Seed projects,Data representatives as multipliers and communication channel	Community networking/ workshops Researchers as champions/ ambassadors
R_2alF9t04iDuEKYy	Have a depository data,Work with researchers during all the data life cycle in a specific research project,Train some ambassadors researchers and let them talk and debate with their colleagues	Support for data publishing Lifecycle support Researchers as champions/ ambassadors
R_1hBfdmIdHgLc5Bz	Provide data services and tools they use for their own needs,Facilitate the usage of their data by the community,Provide visibility and links to their data	Data tools provision Data visibility
R_32Rw1uG27L30c0w	Don't know or have not thought about it in detail now	
R_2SdfX88OHQBwf8o	Trainings,One-to-one meetings,Providing a one stop shop toolkit	Training 1:1 support Data tool provision Visibility of support
R_1mQlpzrjbBxtaqJ	Short webinars and workshops on issues, topics and tools that they will see direct benefit from	Community networking/ workshops Data tool provision
R_2DUCzAgbrVJQMjO	Embedding RDM knowhow in Universities through a RDM training Fellowship (train-the-trainer),Mailing lists,Website of best practice (RDMkit)	Training fellowships Lifecycle support Visibility of support
R_2V9DuP0VIzx0cdZ	Wide data distribution,Reputation for data quality,Research community involvement	Data quality Community networking/ workshops
R_3OdL8ntQrb9i4Ty	Contacting researchers directly upon receipt of funding for projects and meeting with them to explain the data management protocols and procedures being introduced to	1:1 support

	the university	
R_T7QLbIexQev8Vtn	Offering Carpentries workshops to promote use of reproducible data analysis techniques and software sharing and repository software like Git,Attending researcher seminars,Presenting at staff and PhD inductions,Use of volunteer Champions in researchers' local area	Training Data tool provision Community networking/ workshops Researchers as champions/ ambassadors
R_pmGlpMah08gZGhj	Involvement in a starting research infrastructure	Co-design
R_1daBdjwXoIyvC17	Organising of the Open Research Conference,Working directly with research support staff involved in grant applications,Provision of detailed and constantly updated information via the University's intranet pages,The deployment of a contact email address dedicated to research data inquires and questions	Community networking/ workshops 1:1 support Visibility of support
R_33dMKr6Nd06z3aa	Offered basic replication service. This is used not to prove replication, but instead, as a way to help non R users get started with R. We rewrite their proprietary code with heavily marked up R. Excellent experience for student programmers.	Participation in research Co-design
R_D94rop1HRmrv0fn	Our data user often become data depositors once they see we are a valuable and trustworthy repository. We have also obtained data from local and national government departments by highlighting (i) the policy guidance that can arise from academics using government data, (ii) the data-quality improvements we can suggest from user feedback.	Visibility of support Data quality Data reuse
R_3kOIIcCpvjW3ezK	Roadshows,Indabas,Helpdesk engagements,Demos	Community networking/ workshops 1:1 support
R_2CdAWzPWAdMnDs6	Mandatory DMPs for every project are supported at institutional level,Full training programme targeted to PGRs/ECRs but open to all researchers,Membership of many internal research related groups, committees and networks,Active advocacy and engagement with researchers and facilities at a faculty and school level,Strong links with institutional infrastructure and research IT services meaning we can help researchers to access these more easily and directly	DMP policy Doctoral training Research governance Service support/outreach Benefits promotion/ advocacy

Q28 - Barriers to adoption

What other barriers are you aware of that impact adoption of good data stewardship practices?

Themes	Codes
Lack of incentive/credit and reward	Lack of accountability for poor practice
	Lack of credit or recognition for good practice
	Cultural inertia among academics
	Unwillingness to share data
Unmet research support needs	Lack of domain-specificity
	Lack of awareness training/ materials
	Lack of support for non-public data access
	Insufficient budget preparation/ support for costing
	Service complexity
	Lack of semantic competences in IT community
	Inadequate tool provision
Gaps in coordination of support	Insufficient institutional coordination to address the required scope
	Insufficient national/international coordination
	Lack of consensus on stewardship roles definition
	Lack of sustainable funding/ capacity
	Lack of senior management support in institutions

ResponseId	Q28	
Response ID	What other barriers are you aware of that impact adoption of good data stewardship practices?	
R_28HWl2tqIoClm9u	Lack of penalties for failure of delivery of archive quality data,Lack of recognition that (quality) data outputs are of value in themselves within the research assessment process (e.g. REF)	Lack of accountability for poor practice Lack of credit/incentive/ recognition for good practice
R_x31NyLAYiPRqSsN	Lack of domain specific training and guidelines	Lack of domain-specificity

R_20NXKeYtJ63zM28	"This is how we've always done it" attitude	Cultural inertia
R_yX7PrqbBogeyOKR	Credit data producers	Lack of credit/incentive/ recognition
R_1f407TTmMU0XTvF	Data stewardship for core data is invisible and taken for granted. A sector data service built on research data hides the core data including the effort for stewardship and long-term preservation. Research credit systems focus on scientific contributions, there is no counterpart for providing services like long-term data stewardship and essential infrastructure components.	Lack of credit/incentive/ recognition
R_2E9NIOZcSppyRRJ	Lack of awareness and unwillingness to share data	Lack of awareness Unwillingness to share data
R_3lrdiii1eQ83eki	Obstruction by Professors	Cultural barriers
R_3Pk6dJLAJCAX8uo	I think they are well summarized above	
R_3kMqksUS5OR2Uq9	None, the above options capture the desired/crucial culture shift very well.	
R_2rJy5ivrdqkdnc2	Lack of cross-coordination between ongoing national/international efforts. Engaging in the broader community is key, but with many efforts happening outside of the US, it is sometimes difficult to engage due to time zone differences. Would be nice to have a better, coordinated way of sharing information/training materials/etc. across efforts (RDA, CODATA, GO FAIR...)	Lack of national/international coordination
R_3IaCgd2JyjYW0bG	Lack of time to learn about data management,Somehow a low digital literacy	Lack of awareness/ training
R_2xRl2XXWIMVYRgx	Lack of free/global training materials,Lack of best practice examples or tools to maintain long-term access to and use of data that are not in the public domain	Lack of training materials Lack of support for non-public data access
R_3JlQODagILEU9FV	Lack of knowledge concerning real-world domain-specific practices and potential future good practices	Lack of domain-specificity
R_1DqeGf3hkL9voLV	Lack of time to properly invest in data management practices,Lack of suitable and available tools to follow policies and regulations,Lack of a clear and professional communication strategy	Lack of capacity
R_Z9s0UMtIiIQjbnb	Lack of time and knowledge	Lack of capacity Lack of awareness/training

R_UaQptIG0lkK4Iy5	Awareness	Lack of awareness/training
R_3F3dIr4O7ck3rYO	Clear consensus on what constitutes stewardship,Lack of sustained funding of professional, technical support personnel for stewardship with domain specialty	Lack of consensus on stewardship roles definition Lack of sustainable funding Lack of domain specificity
R_1F3WlcDelj9wxYX	Mainly lack of personnel and constant funding cuts. [XXX] now survives with 2.5 FTE. This restricts how much we can deliver, and how much outreach we can do to engage with the non-participating laboratories.	Lack of capacity Lack of sustainable funding
R_1GxLdyuRCbbLtJh	There are no immediate downsides of poor data stewardship. The university does not delete data, it will be there, however poorly managed.	Lack of accountability
R_2A10UL5a6aRDq2V	Internet	
R_DUffQgMZbMtoMmd	Time and money!	Lack of capacity Lack of sustainable funding
R_1jP44AtR1qHAd2Z	Personnel resources	Lack of capacity Lack of sustainable funding
R_1hBfdmIdHgLc5Bz	Need to take data stewardship into account from the start of a project,For research infrastructures need to have a mandate for data stewardship and a provision for it in their budget from the start,Fully consider the issue in the preparatory phase	Insufficient budget preparation
R_1jZi6DANACpdhly	Time (researchers don't have enough time for RDM and data stewards can't cover all the tasks researchers could benefit from) Complexities around providing RDM support tools: problems with contracts/costs for SaaS options, but insufficient IT support staff for in-house solutions	Lack of capacity Service complexity
R_3KHeV7Sc3i6fFrt	Lack of knowledge within IT community to support semantic metadata. If they can't support it, they do not want it to happen.	Lack of semantic competences in IT community
R_32Rw1uG27L30c0w	Don't know (or have not thought about it in detail now)	
R_2SdfX88OHQBwf8o	Lack of incentive	Lack of credit/incentive/ recognition
R_1mQlpzrjbBxtaqJ	Reluctance by researchers to accept that a) their practice could be improved b) that they need to demonstrate to anyone how they work and c) that they've never had to do this before and they publish papers ok. The lack of a framework for reviewing/quality assessing how research data were	Cultural barriers Lack of accountability

	created, handled, transformed and validated throughout science process plus the lack of peer review of research data being the norm contributes to researchers not willing to put effort into something they see as unnecessary.	
R_2DUCzAgbrVJQMjO	Specific researcher requirements not catered for,Some datatypes aren't supported (do not have public repositories)	Lack of domain specificity
R_3OdL8ntQrb9i4Ty	Suitable funding for dedicated staff and direction from management that new procedures regarding data management to be followed	Lack of sustainable funding Lack of management support
R_T7QLbIexQev8Vtn	Lack of a central budget shared with the Library for RDM. In IT we are able to get funding for training/Conference attendance quite easily but it is difficult for the Library. Therefore it is difficult for them to hear about the latest developments in RDM although we aim to feedback information where we can by having regular catch up sessions.	Lack of sustainable funding Lack of institutional service coordination
R_1daBdjwXoIyvC17	The increasing scarcity of staff time working on the research data stewardship, whereas the demand for support in this area is getting higher over time.	Lack of capacity
R_2TmXrTdcQm5mJny	Lack of good tools	Inadequate tool provision
R_D94rop1HRmrv0fn	Old-fashioned notions that data-hording improves academic reputations. Several large-scale data collection projects at SA universities are publicly funded but continue to horde data because of this attitude. Funders also do not follow up to ensure compliance with their FAIR-compliant policies	Cultural barriers Lack of accountability
R_3kOIIcCpvjW3ezK	Lack of tools and infrastructure,Lack of funding,Lack of RDM knowledge	Lack of tool provision Lack of funding Lack of awareness/training
R_2CdAWzPWAdMnDs6	Data stewardship activities are often poorly costed/funded as part of project bids (if at all) so this element then becomes an additional burden for researchers/groups to deal with during the lifecycle of data production, analysis and publishing/preservation. Lack of specialist training to support RDM/data stewardship good practice at a disciplinary level.	Lack of support for costing Lack of awareness/training

Q29- Lessons from experience

And finally, what do you see as the main lessons about the development of your Data Stewardship

services that you would pass on to similar organisations?

Themes	Codes
Build on concrete benefits to service users and stakeholders	Seek senior management support Gain support from institutional governance Take holistic approach to service provision Use `DMPs to introduce RDM Actively engage with community Seek to understand the problem to be solved Provide factual and relevant services that add value and tangible benefits, driven by science needs Integrate interoperability Research and document good practices Build support incrementally Advocate long-term stewardship & research integrity to PIs/ community Build trusted data repository
Embed data stewardship in teaching and training	Build discipline-specific training Develop students' data literacy Train early-career researchers Develop Masters programmes in DS
Engage with external stakeholders	Engage with funders, adapt to their requirements Work with journals for data quality control Network with similar services Participate in (inter)national expert groups Scan the horizon Respond to change in science and technology ecosystem
Coordinate across the organisation	Collaborate across institution Build on existing networks Involve Legal, IP and IT infrastructure services in RDM support Seek both central and embedded roles First centralise then grow through decentralisation Develop 3 core role profiles - research, IT and information Build permanent roles to sustain expertise
Communicate using effective methods	Avoid jargon Define data stewardship Promote understanding of FAIR Use graphic communication Connect people and problems Develop and promote use cases with concrete results Work with small groups Provide and promote RDM benefits
Drive and monitor improvements	Gain insights into research work through impact studies Target simple things first Reduce administrative burdens for researchers Offer researchers incentives / reward

	Counter poor practice Improve service capabilities Seek efficiency gains Persist in building reputation

ResponseId	Q29	
Response ID	Sharing your lessons and experiences And finally, what do you see as the main lessons about the development of your Data Stewardship services that you would pass on to similar organisations?	
R_28HWl2tqIoClm9u	Active engagement with the community is essential and leads to researchers understanding the benefits of engaging with good data stewardship practices and the value of the work that is done. Using 'impact studies' to gain insight into researcher's work and being able to give them exposure helps too.	Actively engage with community Gain insights into research work through impact studies
R_x31NyLAYiPRqSsN	A holistic approach is key. Support for RDM depends on a range of expertise not all of which will exist within a Research Data Service. It also requires alignment of policies which are owned by a range of other services such as legal, and IP and infrastructure supported by other too such as ITS.	Take holistic approach Involve Legal, IP and IT infrastructure services in RDM support
R_2ElS9AUQm4RnAV3	It is very difficult to keep up with the current speedy development of data management requirements and increasing data amounts. Especially given the inflexibility of our institutions' management approach.	
R_yX7PrqbBogeyOKR	Data quality control by publishing and repository using journals	Work with journals for data quality control
R_1F2gMT9p7IpG0Ni	Consider opportunities to increase efficiency while improving services.	Seek efficiency gains
R_1f407TTmMU0XTvF	Join expert groups of long-term data stewards on national to international level and mention the role of long-term data stewardship in discussions within your research community.	Participate in (inter)national expert groups Advocate long-term stewardship to research community
R_z3hz8TQOabaoQnf	Keep going,Approach higher management,Convince the PIs,Make funky graphics,Keep giving presentations,Connect people and their problems	Seek senior management support Advocate to PIs Use graphic communication Connect people and problems

R_2E9NIOZcSppyRRJ	Work with students to make data literacy part of their curriculum in order to develop their awareness and willingness to work with and share data.	Develop students' data literacy
R_3lrdiii1eQ83eki	Collaboration between all University personnel	Collaborate across institution
R_3Pk6dJLAJCAX8uo	Lack of cooperation and dialogue with the researchers and the library,The library is not perceived as stakeholder in the academic environment yet	Collaborate across institution
R_3kMqksUS5OR2Uq9	That Data Stewardship entails much much more than 'just data management'. Data stewardship ought to be allocated in my view quite the generous budget because Data Stewards are able to address aspects of the scientific world that form the basis of what is scientific integrity and scrupulousness.	Advocate role in maintaining research integrity
R_1P4XpTrDfz3k9Tj	There are very few Data Stewards with the professional title in Research Institutions in Denmark. We have submitted and await approval to provide a Master (1 year) Degree in Data Steward at the University of Copenhagen.	Develop Masters programmes
R_2rJy5ivrdqkdnc2	Talk to people! Understand "what is the problem to be solved" FIRST, then begin planning. Also, find ways to make it easier to know who is currently active in the Data Stewardship space. This has been relatively difficult here in the US, where there's a lack of centralized effort as of yet. There are also some US-specific issues that are difficult to map onto ongoing efforts in Europe and elsewhere (funding, for instance). In general, it would be so helpful to have established documentation about known best practices, efforts, training, skills, and so on, and who/what it applies to (government data, PII, microscopy data...).	Seek to understand the problem to be solved Research good practices
R_3IaCgd2JyjYW0bG	Still at its premises, too early to provide feedback	
R_3JlQODagILEU9FV	Help your people do good	
R_1DqeGf3hkL9voLV	Try to involve researchers themselves at the earliest possible stage	Actively engage with community
R_Z9s0UMtIiIQjbnb	It takes a lot of effort, but keep your eyes on the horizon, everything we can pull off is a step in the right direction!	Scan the horizon
R_3iRcprurdSyEhwC	Data stewardship should be an inherent part of every research institution. Both embedded and central DS are extremely important.	Seek both central and embedded roles
R_UaQptIG0lkK4Iy5	We should start with teaching the University/HBO students since year 1. If we want to find a data steward	Embed data stewardship in teaching

	or a technician with data steward skills in 2021, we should have started in 2016, education takes years.	
R_1FtTARj6LnsYlQZ	Work with a smaller group of researchers to solve specific problems. Define and develop use cases/success stories. Try to cover different disciplines / identify cross-discipline projects that need data stewardship support. Promote concrete results.	Develop and promote use cases with concrete results Work with small groups
R_3F3dIr4O7ck3rYO	Interact with organizations and funders to get meet and grow their interests in your domain. They will then advocate for stewardship if they have seen value and that will help move the needle with investigators and management.	Engage with funders Engage with local stakeholders
R_3HSMRDA8la6W1j3	If researchers don't use DM resources, services or tools, it is because they don't see enough short-term benefits compared to the required effort. Until the ration benefits/effort is high enough for researchers, they will not comply to good DM practices. It is up to us data stewards to increase that ratio for researchers.	Provide and promote RDM benefits
R_2rr6NxVELnLtsOG	Enhance networking with similar services	Network with similar services
R_WeblURPkt0efuX7	Focus on customers who ask for your help, do not waste your time with those who do not understand the need of RDM. Others will follow eventually.	Respond to needs
R_1F3WlcDelj9wxYX	Changes are slow but cumulative. Many small incremental changes are required to increase participation. Participation and data sharing by peers encourages more participation. We have also found that once users participate there is little drop out rate, they usually continue to do so. Ideally good data practice will be mandated by funders and journals. We won't reach 100% uptake until this is the case.	Build support incrementally Promote good practices among peers
R_1flyl67o3kKE0hJ	Make it relevant to the researchers, not something that adds burden and administrative load. Factual solutions and active help/assistance.	Provide factual and relevant solutions
R_1GxLdyuRCbbLtJh	Decentralized is currently how we provide data services at my University, so our uptake in my (library) unit is very ad hoc. However, if all of our 3,000 researcher/PIs were using our services, we could not scale. So my advice would be to centralize first e.g., authorize one central unit to do this work and resource them in such a way that as they hit target growth benchmarks we support them by strategically distributing responsibility across the organization. This responsible, controlled decentralization would be a more natural growth pattern than trying to work bottom-up, with everyone scrambling	First centralise then grow through decentralisation

	to help and no one succeeding particularly well.	
R_2A10UL5a6aRDq2V	Integrating interoperability	Integrate interoperability
R_DUffQgMZbMtoMmd	Focus on key simple things first, don't let the perfect be the enemy of the good. Remove administrative burdens from researchers.	Target simple things first Reduce administrative burdens for researchers
R_1NslQE5mjsfGuBa	Management buy-in and resourcing are essential for success. Changing researcher attitudes/practice and offering incentives are critically important. Development of good policies and procedures (and communicating same) is very helpful to promote transparency and confidence.	Gain senior management support Offer researchers incentives Document good practices
R_2aIF9t04iDuEKYy	Institutional Governance must support and help services and be convinced of the benefit of having them.	Gain support from institutional governance
R_1hBfdmIdHgLc5Bz	The [XXX] is a mature data infrastructure, which was created in [YYYY]. Among the lessons learnt from this long-term experience: (a)the repository function is a collateral consequence of the main mission of the [XXX], providing added-value digital services to the astronomical community, (b) to stay for the long term, be driven by user needs (science needs),adjust your strategy to take into account scientific and technological evolutions and the evolution of the context, build strong collaborations with the relevant elements of the ecosystem (research infrastructures, journals, other data centres), (c)data stewardship should not be considered in isolation and operating the [XXX] as an integrated team of researchers, "documentalists" (data stewards)and IT engineers has been essential for its successful longevity since it allows to take into account properly the different aspects of the work and their interactions, (d) the expertise in all these matters build up on the medium-long term and it is essential to have a significant fraction of permanent staff in the three profiles.	Provide services that add value, driven by science needs Respond to change in science and technology ecosystem Develop 3 core role profiles - research, IT and information Build permanent roles to sustain expertise
R_1jZi6DANACpdhly	Build a team for data stewardship services to ensure that you have enough people who can directly work with researchers without being overloaded. Invest in discipline-specific data stewardship training to ensure that research support specifically meets the needs of researchers and helps to get their buy-in. DMPs required by funders can be a starting point for introducing RDM, but ongoing engagement with RDM requires that researchers see the benefit of good RDM practices.	Build discipline-specific training Use `DMPs to introduce RDM
R_3KHeV7	Start small and build a community. Get buy-in from	Build support incrementally

Sc3i6fFrt	academics to enforce good behaviour of their students. Look for tangible benefits and focus on them, to win over those who see little reason to get involved.	Focus on tangible benefits
R_1mQlpzrjbBxtaqJ	Senior researchers /managers are the essential influencers of change and they need buy in and set expectation/promote approaches/reward outcomes. Actions are needed to negate poor practices and misinformation around research data management perpetrated through the mechanism of mentoring of early career researchers by established researchers.	Gain senior management support Offer researchers incentives/ reward Counter poor practice
R_2DUCzAgbrVJQMjO	Researchers are put off by jargon. Data Stewardship as a term needs to be defined. Researchers do not understand the term, FAIR data. Researchers need evidence of why they need to invest in Data Stewardship - where previously they've used hard drives.	Avoid jargon Define data stewardship Promote understanding of FAIR
R_2V9DuP0VIzx0cdZ	Continually identify and adopt capabilities for improving services.	Improve service capabilities
R_3OdL8ntQrb9i4Ty	It takes time to develop protocols and procedures. Looking back on data that has not been managed correctly takes so much time, money and effort . It is also difficult to get researchers onboard with the new procedures as they see this as another level of governance, more administrative things to do.	Build support incrementally
R_T7QLbIexQev8Vtn	Always engage with your researchers to get their feedback and make use of those who appreciate your services to spread the word amongst their local area & beyond! Good communication between all the different levels of a University involved in RDM is key - e.g. Ethics, Legal, IT and Library.	Actively engage with community Involve Legal, Ethics and IT infrastructure services in RDM support
R_1daBdjwXoIyvC17	We happened to respond quickly to the rapid changes in the RDM field triggered by funders requirements, and we worked on adapting to the new demands. So, we focused on systems and methods in order to provide sufficient and effective services, though we did not win the hearts and minds of various stakeholders from the beginning.	Adapt to funders' requirements
R_3nMYff4oUs40Fxn	It should be additional funding and support from the university authorities	
R_2TmXrTdcQm5mJny	There is no solver bullet, and you have to persist. It takes a long time to get people on board and to build a reputation.	Persist in building reputation
R_33dMKr6Nd06z3aa	Include beginners in your work. They will grow into research positions so having them pre-trained will	Train early-career researchers

	benefit the cause.	
R_D94rop1HRmrv0fn	There are low expectations regarding open research data services in Africa. But creating an internationally-certified and trusted data repository provides an example of best practice that can change attitudes and encourage good research data management policies and practices, including the open sharing of data.	Build trusted data repository
R_3kOIIcCpvjW3ezK	Even if you take baby steps, keep moving forward. Learn from good practice developed by the wider community. Engage with and listen to your stakeholders. Communicate constantly, also about shortcomings in your service. Collaborate, collaborate, collaborate.	Build support incrementally Learn from wider community Engage with local stakeholders Collaborate across institution
R_2CdAWzPWAdMnDs6	We are nowhere near having a well-defined, resourced and supported commitment to data stewardship as a role yet, but it seems key that this is done in a way that enhances and utilises existing networks and connections to their best advantage. Few researchers will be energised to building a new network "from the ground up", but if we can provide ways to link existing areas of good practice and potentially fund training and development for these then that would be a good start!	Build on existing networks