ROER4D
Project Activity Toolkit

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http://roer4d.org/

Networking

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Summary

The Research on Open Educational Resources for Development (ROER4D) project was a four-year (2013–2017), large-scale networked project which set out to contribute a Global South research perspective on how open educational resources can help to improve access, enhance quality and reduce the cost of education in the Global South. The project engaged a total of 103 researchers in 18 sub-projects across 21 countries from South America, Sub-Saharan Africa and Asia, coordinated by Network Hub teams at the University of Cape Town (UCT) and Wawasan Open University.

This chapter forms part of a project activity toolkit, which is comprised of five documents outlining activities associated with each of the ROER4D UCT Network Hub pillars of project management activity: networking, evaluation, communications, research capacity building, and curation and dissemination. It is hoped that these chapters will be of practical use to other projects attempting to integrate any of these functions in their operational strategy.

The focus of this chapter is on the networking activities conducted within the ROER4D project. It explores the concept of networking in the ROER4D project context, outlines the project approach towards visualising and analysing the project network, identifies useful tools for network visualisation and offers insights into lessons learned. Overall, it highlights the value of positioning the networking function as a specific project objective in order to better engage current and prospective researchers, educators, publishers, other research projects, advocates and policy-makers.

Acronyms and abbreviations

COL	Commonwealth of Learning
IDRC	International Development Research Centre
KEQs	key evaluation questions
OER	open educational resources
PI	Principal Investigator
ROER4D	Research on Open Educational Resources for Development
TAGS	Twitter Archiving Google Sheets
UCT	University of Cape Town
UFE	Utilization-Focused Evaluation
UNESCO	United Nations Educational, Scientific and Cultural Organisation

Introduction

In the Research on Open Educational Resources for Development (ROER4D) project, the networking function was closely linked to the project evaluation process. The mapping and evaluation of this function was therefore undertaken by the Evaluation Advisor. Much of the networking activity was visualised using data and tools selected to answer specific evaluation questions, providing an indication of whether ROER4D's networking approach was working as intended. The purpose of this chapter is to outline and reflect on what was done in the networking process, why these activities were pursued, and what the project's central coordinating team, the University of Cape Town (UCT) Network Hub, learned.

What is networking in the ROER4D context?

The specific objectives[1] of the ROER4D project were to:

1. Build an empirical knowledge base on the adoption and impact of open educational resources (OER) in education.
2. Develop the research capacity of OER researchers.
3. Build a network of OER scholars.
4. Communicate research to inform education policy and practice.

To help meet these objectives, an implicit intent was framed as an additional objective, namely to:

5. Develop a strategic approach towards the curation, publication, and dissemination of research documents and data collected in the project.

Objective 3 in this list, "to build a network of OER scholars", demonstrates the fact that networking was conceived of as a central project imperative in the research design and project proposal development phase. However, at the commencement of the project when the UCT Network Hub was engaged in establishing how the networking objective could be evaluated, it became clear that the original ROER4D proposal was not explicit about what constituted a network and who would be considered an "OER scholar". It was also not clear whether it was only OER scholars (i.e. researchers) who were the central focus of this function, or whether other stakeholders should be considered as part of this network. These additional potential stakeholders in the networking process included: other OER research teams (e.g. OER Research Hub and the Institute for the Study of Knowledge Management in Education), intergovernmental agencies (e.g. United Nations Educational, Scientific and Cultural Organisation [UNESCO], Commonwealth of Learning [COL] and the European Commission), OER funders (e.g. Hewlett Foundation, Shuttleworth Foundation and the UK Department for International Development), OER implementation projects (e.g. Siyavula and Teacher Education through School-based Support in India) and potential users of ROER4D research findings (e.g. government officials, policy-makers and institutional managers).

1 http://roer4d.org/

As a point of departure, consulting the project funder's (Canada's International Development Research Centre [IDRC]) definition of how it defined a network proved to be a useful starting point:

> IDRC defines a "network" as a *social arrangement* comprising either organizations or individuals that is *based on building relationships, sharing tasks, and working on mutual or joint activities*. A network, in other words, is a forum for human exchange. Central to IDRC's understanding of networks is the primacy of relationships. However, having a common purpose is what makes it a network, not simply networking. Members are in pursuit of something together and are engaging in efforts to realize that goal. (Willard & Creech, 2006, p.1).

In line with this conception of a network as complex social arrangement with mutual goals, it became clear that ROER4D would need to undertake networking at at least three levels: firstly, within the cohort of ROER4D sub-project researchers; secondly, between the general community of researchers working in the area of OER; and, thirdly, with practitioners, intergovernmental agencies, funders, policy-makers and the broader public. These levels of networking activity are represented in Figure 1.

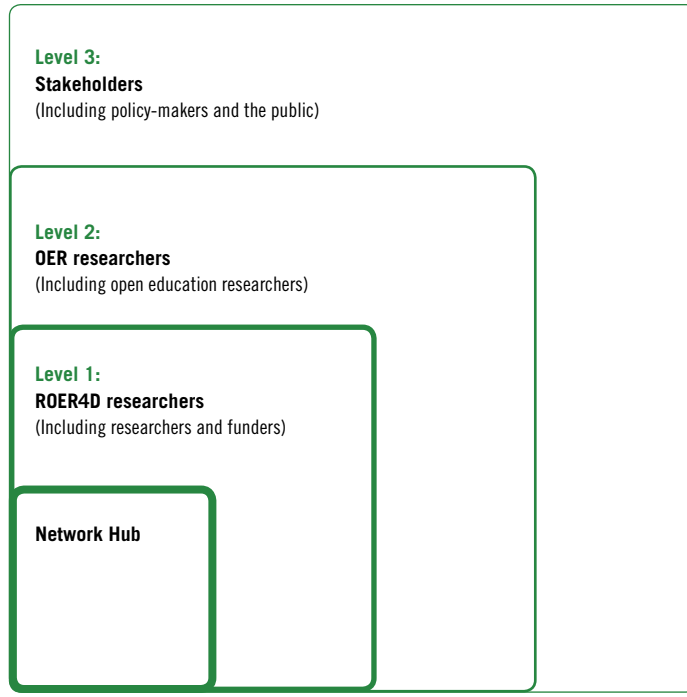

Figure 1: Levels of ROER4D networking activity

The first level of networking with ROER4D researchers was crucial to the progress and day-to-day running of the project. This level of the ROER4D networking process was similar to the aspect of activity in the IDRC networking definition defined by Willard and Creech (2006) as a type of "co-ordinating network". As the main co-ordinating entity of the project, the UCT Network Hub was the key role-player in project-related networking

activity. Engaging ROER4D researchers was deemed important in terms of addressing all main project objectives, but was primarily focused on objective 3: building a network of OER scholars.

The second level of networking was focused on building relationships between ROER4D researchers, the Network Hub and the broader open education community, which included those involved in developing or researching OER, open textbooks, Massive Open Online Courses, open access, open licensing and open data; as well as those researching information and communication technologies in the Global South or involved in open research practice, irrespective of the focus of their study. Engaging the broader open education community was also deemed important in terms of addressing ROER4D's objective 3: building a network of OER scholars.

The third networking level entailed engagement with potential users of ROER4D research findings: practitioners in OER, open textbooks, MOOCs, open data and open research projects; intergovernmental agencies (e.g. World Bank, UNESCO and COL); funders; policy-makers; and the broader public. This audience was important to the project in terms of addressing ROER4D's objective 4: communicating research to inform education policy and practice.

Visualising and analysing the ROER4D network

ROER4D networking activities were primarily focused on the ROER4D objective of building a network of OER scholars. To this end, the ROER4D evaluator used a Utilization-Focused Evaluation (UFE) approach (Patton, 2008; Ramirez & Brodhead, 2013) to articulate the primary use of evaluating this objective for the ROER4D team, the relevant key evaluation questions (KEQs) linked to that use, and which measures could be used to determine the level of success in building a network of OER scholars. The UFE approach was also useful in terms of assessing which of the ROER4D networking strategies were the most effective in terms of building a network of OER scholars. Figure 2 provides an overview of the networking evaluation use, the KEQs and relevant measures.

Exploring the ROER4D networking process in order to have proof of whether it was working was of central interest to the UCT Network Hub in terms of addressing the primary project objectives. The evaluation function was therefore focused on network

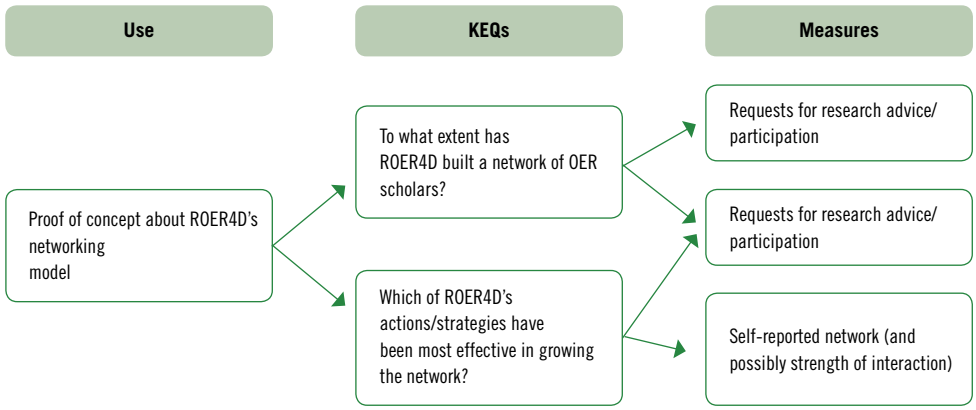

Figure 2: Overview of the networking function evaluation use, KEQs and measures

building and on assessing which ROER4D strategies were most effective in terms of growing the network. To this end, examining the number of requests received by the Network Hub for advice and participation in research activities and growth of selected team members' networks, as well as the growth of ROER4D's social media networks, were all considered in terms of measures.

A simple visualisation of the ROER4D network (including the UCT Network Hub) was created and updated periodically over the course of the project (Figure 3) in order to gain a sense of network growth and and significant changes in network structure, as well as to highlight connections between clusters and projects. This depiction of the network provides a visual representation of the size or extent of the different key areas (each coloured circles' size indicates the number of people involved) as well as the people common to two areas of work (indicated by the linkages).

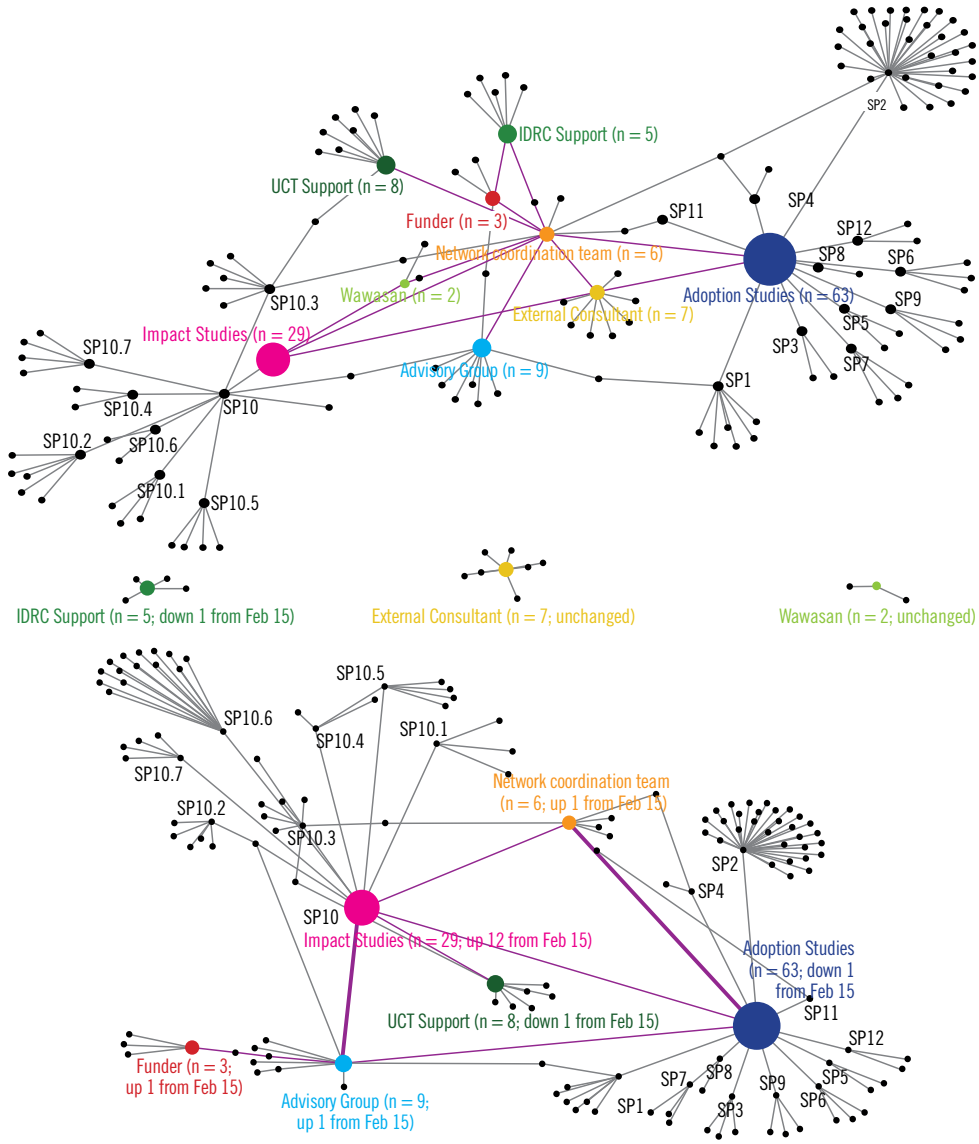

Figure 3: Visualisation of ROER4D network level 1 (including the UCT Network Hub, sub-project researchers and IDRC), as captured in February 2015

What we measured

Requests for participation

Public requests received by the Network Hub for research advice, participation, feedback and dialogue were recorded over the course of the project. The requests were analysed by type in order to get an idea of what kind of requests were being received (Figure 4).

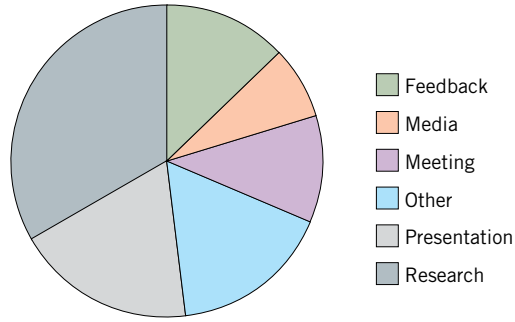

Figure 4: Number of requests received by the ROER4D Network Hub organised by type of request, as captured in December 2016

Of the 56 requests received by December 2016, the largest number were related to either ROER4D research or participation in OER-related research (18). This was followed by requests to give presentations (10) and general networking requests (9), such as requests to be added to mailing lists or participate in online networks. The largest number of responses were not from OER researchers (68.4).

Self-reported network of the PI

As a case study of networking activities and their measurement within the project, the growth of the Principal Investigator's (PI) network through connections made at conferences, meetings and workshops relating to ROER4D provided a useful proxy for networking activity within the project. This tracking was done in order to provide proof of concept of ROER4D's networking approach and feedback to the IDRC on the networking value of attending conferences. Gathering evidence in this regard was valuable in terms of assessing the value proposition of these interactions, given the high financial cost that face-to-face meetings can incur. At each of these events, the PI made connections with other researchers, project leaders, practitioners, funders and policy-makers.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	**Date**	**Name**	**Country**	**Position**	**Institution**	**email**	**Twitter**	**Meeting 1**	**Meeting 2**	**Meeting 3**	**Meeting 4**	**Meeting 5**	**Meeting 6**	**etc.**
2		Person a	Malaysia		University a			1		2		3		
3		Person b	Singapore	Researcher	University b			1						
4		Person c	Netherlands	VC	Funder a			1		2	3		4	
5		Person d	Canada	Programme Officer	Funder b			1	2	3			4	
6		Person e	India	Assoc Prof	University c			1	2	3			4	
7		Person f	India	Principal	NGO a			1		2				
8		etc.												

Figure 5: De-identified extract from the spreadsheet used to track the PI's growing network (numbers under meetings indicate how many times the PI connected with a specific person)

In order to track network growth over time, the PI kept a detailed record of who she interacted with at each event. An interaction was defined as "a conversation in which you've talked to someone about your ROER4D work and/or the ROER4D project". A screenshot of the ROER4D spreadsheet columns used to capture these data with some examples is shown in Figure 5.

The purpose of this process was to track who the PI connected with and who was more informed about the ROER4D project as a result. Sub-project researchers in the ROER4D project whom the PI re-connected with at each event were also tracked. These data could then be analysed and visualised to show who the PI was interacting with and how these interactions expanded her network over time. Combined with information about which events these interactions occurred at, this growth could be represented at different timepoints in the ROER4D project period (Figure 6).

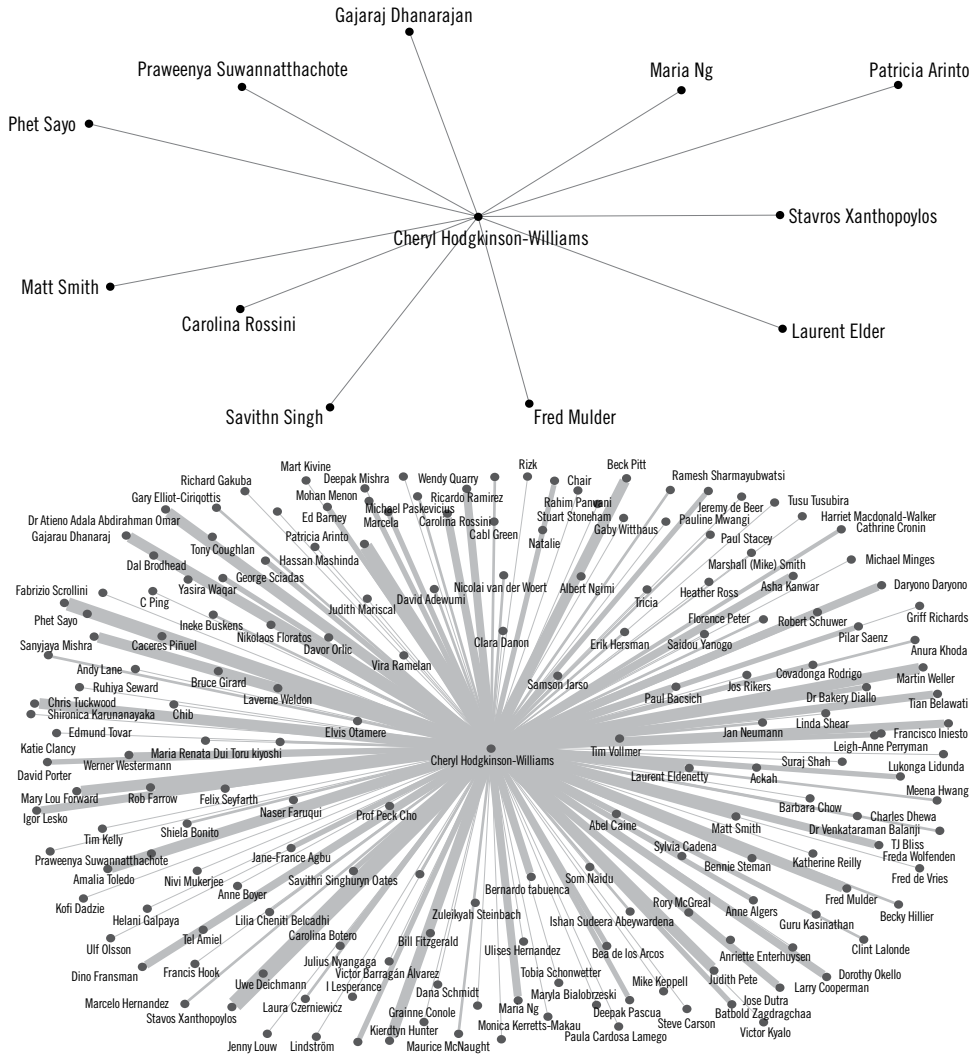

Figure 6: Network growth of the ROER4D PI from May 2012 (first ROER4D meeting) to September 2016 (final ROER4D meeting in the evaluation period). The thickness of the lines indicates the total number of times the PI has connected with a specific person (i.e. the number in the meeting column shown in Figure 5).

Identifying what information you want to track (e.g. country, job position, social media profile) can assist you in future analysis around who you have in your network. Depending on which additional data can be collected, one is able to visualise a network by geographic region, seniority of position or place of work. This type of network analysis can be conducted for any member in a project, provided that accurate data on their interactions can be obtained. It should be noted that this kind of data collection can, however, be time consuming for the network member as they have to document it, preferably during or very soon after any project-related event that they attend. Due to the time-cost of tracking these connections and due to the PI's central role as the public representative of the project, the UCT Network Hub chose to limit its network tracking to her activity (rather than including all Network Hub team members). Having this data to demonstrate the usefulness and cost-efficiency of attending meetings in person made the process worthwhile in the ROER4D context.

Social media networks

Social media can play a key role in project networking and promoting online visibility amongst a broader interested audience. Using available data and tools to track progress in building social media presence is an important aspect of providing evaluation insights around the success of communications and networking activity. In evaluating the project's networking activity, an extensive examiniation of the project's network growth and defining characteristics of the project's social media channels was conducted, focusing on who and how many people were reached by the UCT Network Hub via the main project social media channels, Twitter[2] and Facebook[3].

An examination of the project's Twitter account revealed a continued increase in followers over time, with approximately 0.8 new followers a day. The ROER4D Twitter account had 824 followers on 6 December 2016, compared to 1 204 on 9 April 2018 – most of whom appeared to be primarily interested in technology and education. While English was the primary language of the followers, Spanish was also quite prevalent (10% of followers). Based on the December 2016 analysis, the top three countries of followers' origin were South Africa (23%), the UK (15%) and the USA (14%).

An interesting comparison can be made between one's project Twitter account and the personal accounts of team members. Given the fact that the ROER4D PI used her Twitter account as a professional networking tool, the overlap of followers between the two accounts provided insight into the audience being reached and who the project account might want to follow in order to pursue additional engagement (Figure 7).

The ROER4D Facebook page had 200 likes on 29 November 2016 and 257 on 9 April 2018, meaning that there was an increase in page likes over time of roughly 0.27 new followers a day. Based on the November 2016 data, the top three countries origin for Facebook page likes were India (50%), South Africa (11%) and Columbia (5%).

As the ROER4D PI utilised Facebook for a mix of personal and work purposes, comparing these accounts was not deemed informative in evaluating the project's networking reach.

2 https://twitter.com/ROER4D
3 https://www.facebook.com/ResearchOERforDevelopment/

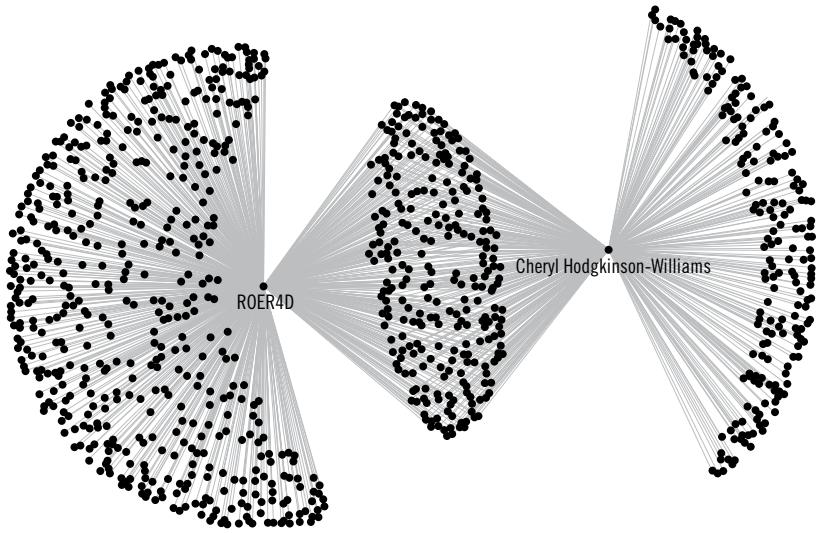

Figure 7: Network overlap of the ROER4D project and the ROER4D PI's Twitter account followers, as captured in January 2017

Lessons learned

Analysis of project networking activity revealed that by December 2016, ROER4D had established a network using face-to-face events and social media by forming connections with more than 1 198 people and organisations across several layers of the network, including interested third parties. Face-to-face meetings within the level 2 network, where relationships were built between the Network Hub, ROER4D researchers and the broader open education research community, were the dominant form of networking activity for the project PI (Figure 8).

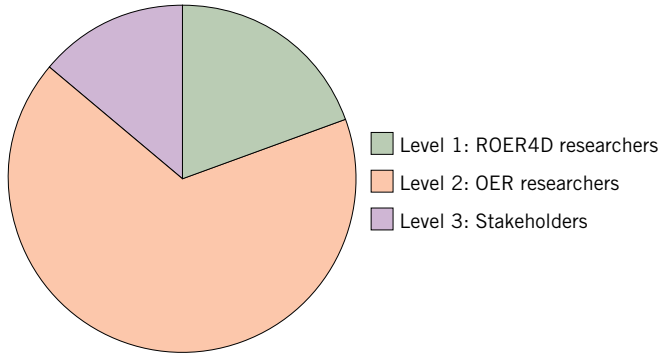

Figure 8: Network levels reached in the PI's face-to-face meetings

Apart from a notable audience in South Africa, most of the project Twitter followers were from the Global North; while almost three-quarters of the Facebook audience were from Global South countries. In terms of numbers, social media channels, especially Twitter, were most effective at growing the network. In terms of country reach, the biggest Global South network presence was on Facebook.

Leveraging the network

The process of maintaining a record of and analysing your networking activity places you in a better position to leverage that network. You have a record of who you've been in touch with, as well as where and what your connection is to those organisations and individuals – information which can enable you to connect with the right people at the right time and open doors to other opportunities. An example of this kind of data application was evidenced in the the ROER4D edited volume publishing process, where the ROER4D PI and the Curation and Publishing Manager scrutinised the PI's network in order to identify suitable peer reviewers.

Tools to explore networking

The following tools were used to explore ROER4D's network at multiple levels, and may be useful to other projects:

- Twitter Archiving Google Sheets (TAGS)
  For those wanting to monitor Twitter, TAGS[4] curates an archive of Tweets which contain a specific word or phrase. At the time of writing, this archive could not be set up retrospectively, so could only generate this data from the time you activated it. The tool uses Google Spreadsheets (which means that you need to have a Google account) to store the data and works by running a web-based script to retrieve data from Twitter (Gaffney & Puschmann, 2013). The TAGS dashboard overview, which includes top Tweeters of a particular term or phrase, is also useful for checking progress and interactions. The archive is visualised and can be explored via TAGSExplorer[5]. In the ROER4D context, tweets containing the term "ROER4D" were collected.
- NodeXL
  For general network visualisations and analysis, NodeXL[6] helps you to graph relationships between entities (Smith et al., 2009). NodeXL is an open source template add-on for Microsoft Excel, so you need to have this software to use it. The advantage of this is that you can learn to use NodeXL quickly if you are familiar with Excel (Smith et al., 2009). This powerful tool will allow you to visualise any network data which consists of entities (nodes) and an indication of the relationship(s) between them. NodeXL also allows for some direct importing of social media data (Hansen, Shneiderman & Smith, 2010). This tool was used by ROER4D to visualise the growing number of ROER4D Twitter followers and to explore interactions with that account at defined timepoints.

Recommendations

The process of mapping and interrogating networking activity was seen to be extremely valuable for the ROER4D Network Hub in terms of growing the project network and gaining a sense of the general efficacy of project interactions, particularly as relates

4 https://tags.hawksey.info/
5 http://hawksey.info/tagsexplorer/
6 http://nodexl.codeplex.com/releases/view/117659

to meetings and conferencing activity. The ROER4D Evaluation Advisor recommends the following to other projects or individuals wishing to engage more meaningfully with networking activity:

- Network as widely as possible online, incorporating strategic face-to-face meetings, in order to make the most of project resources.
- Track individual and project networking, where possible, in a spreadsheet, as this can show the value of your efforts and serve as a record of your connections over time. Start by capturing as much detail as possible and refine your data collection approach over time.
- Data from a detailed networking spreadsheet can be analysed and visualised over time, providing a valuable snapshot of project interactions which can be useful in planning future project communication activities. These data are also valuable when reporting on project activity to funders.
- There are a growing number of free or cost-effective network tracking and visualisation tools available. Explore the options to find the tools that best meet your requirements.

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