Supporting University Change

Lessons learned from the Open Science community

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Implementation of Open Science practices (i.e. Open Source, Open Access, Research Data Management, Citizen Science, etc.) in research institutions has been more responsive to external factors and regulations (i.e. Plan S, Horizon 2020) than a proactive movement taken by the governance of research institutions. As the drive for incorporating Open Science practices grows, waiting for university governance to react to implement diminishes research opportunities and inhibits growth for funding access. Implementing change in large institutions requires engagement with, not only the governance structure, but influential stakeholders that help steer the management.

Currently, dissemination and implementation of Open Science (OS) practices in research institutions has been facilitated by researcher-led initiatives and grass-root organisations. However, bottom up communication between these activities and major stakeholders to drive the shift in practice slows the translation of good OS practices. Improving this communication would improve discussions with influential stakeholders and university governance towards developing effective policy on disseminating OS across an institution. But as OS practitioners in grass-root initiatives, being able to effectively navigate institutional channels and engage across multi-faceted organisations can be daunting and cumbersome.

At the Open Science Retreat 2024 in Schoorl, Netherlands, a working group on how to empower researchers and support staff to facilitate a shift towards greater OS implementation to university leadership convened. Reviewing change management practices and hearing real-world cases of facilitating change at different institutions across the world, the working group sought to understand the landscape of university leadership with regards to who the players are, how to reach them, and how to engage with them so that researcher-led initiatives and grass-roots organisations can effectively interact with university management. The implementation of OS practices across research institutions requires a combined top-down and bottom-up approach.

How does change management work?

The shift towards OS practices is a change in the way researchers engage with and disseminate results from the research process. Change management entails a methodical strategy for guiding individuals, teams, and organizations through transitions from their present condition to a preferred future state. This process encompasses thorough planning, proficient execution, and ongoing maintenance of changes, all while attending to human elements like resistance, communication, and stakeholder involvement. Its overarching goal is to mitigate disruptions and maximize results throughout periods of organizational transformation. There are two basic models of how change is implemented at organisations (Figure 1).
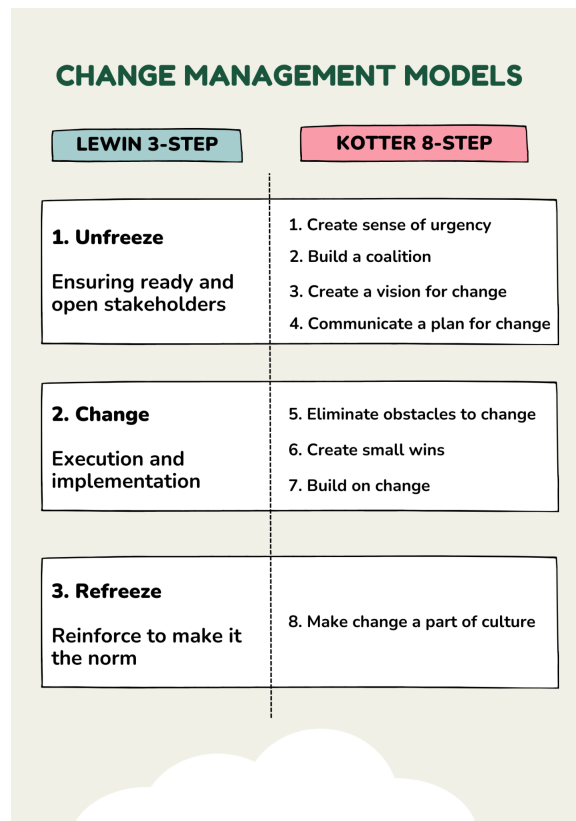

Figure 1. Lewin' and Kotter's Change Management Models

The most basic model for change management is Lewin's 3 step-model. In this model there are three phases:

1. **Unfreezing Phase**: Preparing the organization for change by creating awareness of the need for change and minimizing resistance.
2. **Change Phase**: Implementing the desired changes effectively, often involving communication, training, and restructuring.
3. **Refreezing Phase**: Stabilizing the changes by reinforcing new behaviors, norms, and practices to make them a permanent part of the organization's culture.

A more comprehensive framework to view change management is Kotter's 8-step model, which expands on Lewin's model in more detail. The 8-steps include:

1. **Create a Sense of Urgency**: Communicating the need for change and highlighting the risks of maintaining the status quo.
2. **Form a Powerful Coalition**: Building a strong team of influential leaders and stakeholders.
3. **Create a Vision for Change**: Developing a clear vision that will align everyone toward a common goal.
4. **Communicate the Plan**: Having open and transparent communication channels facilitate engagement and alignment on the vision and roadmap forward in the change process.
5. **Empower Broad-based Actions**: Removing obstacles and empowering organizational members to contribute to the change process to foster ownership and commitment.
6. **Generate Short-Term Wins**: Celebrating small wins creates momentum and builds confidence in the change process.
7. **Build Upon Change**: Utilizing past achievements as a foundation for ongoing enhancement and adjustment in response to changing circumstances and prospects.
8. **Anchor New Approaches in the Culture**: Ensuring that incentives, recognitions, and performance evaluations are aligned with the desired shifts, thereby strengthening their acceptance and integration into the organization's ethos.

When we examine these models side-by-side in Figure 1, we see that most efforts of the change management process are concentrated on preparing the organization for the change i.e. the unfreezing phase in Lewin's model or steps 1-4 in Kotter's model. Moreover, Kotter's model emphasizes the importance of building a coalition of engaged leaders and stakeholders as the second step.

Hence, we focus on the first part of Kotter's 8 steps to change management in the context of getting Open Science issues onto the agendas of university leadership. In multiple group discussions at the Open Science Retreat 2024, we collected narratives of individuals who have experienced or witnessed the process by which Open Science issues have been brought forth to the upper echelons of university management. Based on these narratives, we hope to provide guidance for people who want to shape the future of the Open Science policy and practices at their institutions in broadly understanding who the decision-makers are at research institutions and what motivates them, how to reach the decision-makers, and how to engage with them.

Motivation of university leadership for Open Science initiatives

Understanding the motivations of university leadership is crucial when approaching them for an ask, as it allows for tailoring the request in a way that aligns with their priorities and concerns, increasing the likelihood of obtaining support and cooperation. From discussions amongst participants actively working in engaging university leadership in OS issues, there have been some common triggers and reasons that have arisen during these conversations.

Firstly, there is a growing awareness of the importance of OS principles for research integrity and transparency. New evaluation protocols and mandates from funding agencies often require

adherence to OS practices, driving universities to comply to secure grants and funding. For example, there must be compliance with certain OS practices when applying and implementing projects supported by funding from the Horizon program by the European Commission (https://rea.ec.europa.eu/open-science_en).

Additionally, sometimes these changes are driven by internal or external controversial events, either within the university or by witnessing similar events unfold at other institutions, serving as a strong driver in adopting new changes. Universities are deeply concerned with their public image as it directly impacts their reputation, credibility, and ability to attract students, faculty, funding, and partnerships. For example, a cyberattack in 2019 on the University of Maastricht influenced not only the university itself, but all universities in the Netherlands to adopt 2-Factor Authentication for tightening cybersecurity (https://dub.uu.nl/en/depth/cyber-attack-maastricht-small-chance-impact-enormous, https://www.maastrichtuniversity.nl/file/reponseofmaastrichtuniversitytofox-itreportpdf).

In the same thread of maintaining a positive public image, inter-university competition can also play a role in initiating change, as universities seek to align with global trends and best practices in research. Considerations such as rankings and meeting key performance indicators (KPIs) further incentivize university leadership to address OS concerns. Ultimately, addressing recurring internal community concerns and fulfilling the responsibilities inherent in their roles contribute to the impetus for university leaders to prioritize Open Science initiatives.

Understanding university governance: Who is who?

Knowing the landscape of university governance is paramount for effectively advocating for OS issues to upper management. By comprehending the intricate structures, decision-making processes, and key stakeholders within university governance, advocates can strategically direct their messages to the appropriate channels and decision-makers. This understanding enables them to navigate the organizational hierarchy, identify influential figures who can champion OS initiatives, and tailor their communication to resonate with the priorities and concerns of upper management. Moreover, grasping the nuances of governance frameworks provides insights into the institutional culture, dynamics, and power structures, facilitating the formulation of persuasive arguments and strategies to advance OS agendas at the highest levels of university leadership.

Specifics for a particular university can almost always be found on the university's website, and more quickly found with an online search: [*University of Interest*] Organigram or [*University of Interest*] Governance. In Figure 2, we present what a standard organigram might look like across higher education institutions, including internal and external *influencers*.
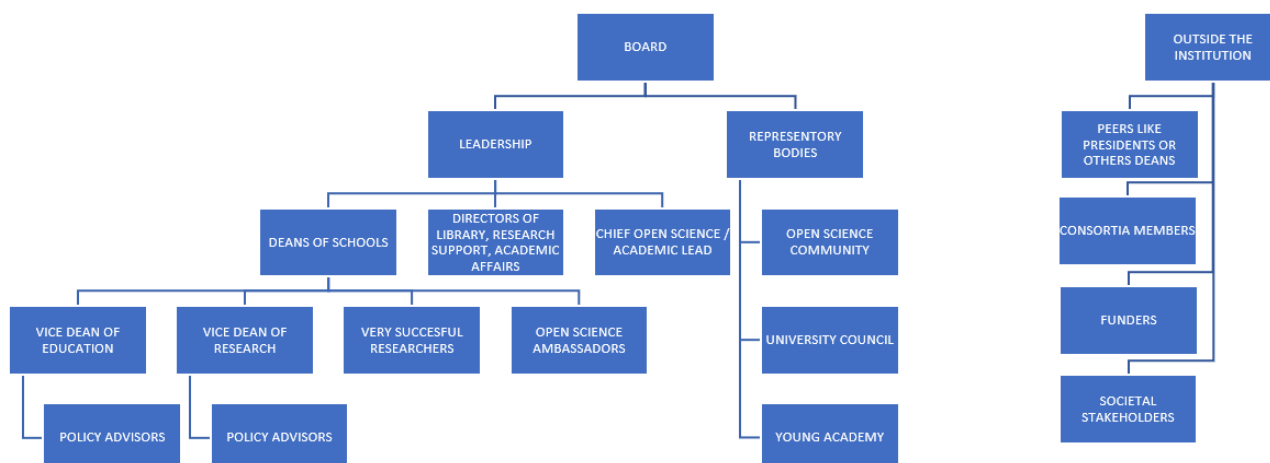
Figure 2. An generalized, overarching view of the university's leadership structure and key stakeholders involved in decision-making. *Please note that the exact entities, relationships, and titles may vary across institutions.*

University leadership

The example universities being discussed within the 2024 OS Retreat working group comparing and contrasting university governance structures were largely from the Netherlands, Germany, and Switzerland. Through our discussions we find that universities can be structured slightly differently both between and within countries with also different power dynamics between their governing bodies.

However, we found that there is generally an Executive Board-like entity (i.e. Board or sometimes Rektorate Conference) that develops university-wide strategies and issues mandates to drive initiatives supporting these strategic missions. How many and who has a seat on the executive board and their functions vary across institutions[1] (e.g. Presidents, Chancellors, Rectors, Vice Presidents, etc.). In some configurations, there is also a Supervisory/Advisory Board consisting of external members advising the Executive Board.

Another recurring feature in university governance are the Deans or Directors and Vice Dean/Directors that oversee different Faculties/Schools and functional units of the university (i.e. library, academic affairs, finance, etc.). Note that specific responsibilities can be concentrated by

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[1] The board can range between 3-7 persons holding different - sometimes competing or even conflicting - responsibilities and portfolios like education, research, IT, corporate relations, etc. This implies that when applying for e.g. resources for open research infrastructure, both the person responsible for research (usually the Rector) and the person responsible for the resources (i.e. 'the third member' at Dutch institutions) have to be convinced.

different people(e.g. a Vice Dean of research / research director) who probably is not mandated to make decisions on Open Educational Resources.

During the discussion within the working group, the power dynamics between Executive Boards and Deans/directors roughly fell into two general categories: a strong, central driven organization where the Board has more influence to drive changes across different faculties/schools and in contrast, a distributed scenario where greater influence is held by specific or groups of faculties/schools and the Board plays more of a role of facilitating the interests of many influential parties.

Aside from specific people and leadership offices in university governance, there are also representative bodies (e.g. University Councils, University Committees, Senates, etc.), which can be decision-makers as well. Temporary committees or working groups (e.g. for Open Science) can also be established to achieve certain goals for the university. These representative bodies or Committees offer an opportunity for the more general university members to act cooperatively in decision making at the university level.

Influencers

Influencers are internal and external entities or individuals in the stakeholder landscape who have influence on different decision making bodies in university governance. They could come from upper echelons of management like presidents from other universities or a research director/Vice Dean that is in favor of (an aspect of) OS. In contrast, bottom-up, grassroots leaders can also be invited to provide perspectives on decision making processes.

The extent of influence does not necessarily correlate with the level of seniority, as the strength of influence or 'lobbying' can vary depending on the situation. While strength in numbers might favor those lower in the institutional hierarchy, it is advisable to initially engage with influencers who are in your immediate network or already somewhat sympathetic to the cause you wish to address. From the discussions amongst participants at the OS Retreat, we compiled a non-exhaustive list of potential influencers to consider when advocating for OS issues, presented here in no particular order :

-   Representatives or individual members of general assembly-like bodies at your institution: These organizations can collect community concerns and bring them forward to university leadership. Examples in the Netherlands include the local chapters of the Open Science Community, PhD Council, University Council, and the Young Academy[2].
-   Deans, Vice Deans, research and/or education directors: While they may also hold decision-making authority, the influence capacity within these groups can be highly impactful. Keep in mind that deans and directors from a different school than your own

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[2] At Dutch universities there is a body of talented researchers that received their PhD in the last 10 years and that are appointed by the deans and the rector to "proactively contribute to the development and dissemination of ideas about research, education, impact, and university policies from the perspective of early- and mid-career academics". See e.g. the YEA

affiliation might offer more constructive support for your cause than your immediate superior and can also be allies.

- Highly accomplished researchers who have received prestigious grants and/or awards: They may have significant impact both in terms of broader public relations and direct influence on decision-makers.
- Policy advisors, both from central as stationed at schools: They engage with decision-makers, providing guidance on actions to pursue or avoid based on their expertise. Their influence should always be acknowledged.
- The administrator, who is the gatekeeper for meeting agendas of the boards/(vice)Deans meetings: This person has different titles depending on the country (e.g. Dutch 'secretaris' or 'griffier,' German 'Sekretariat,' English 'Executive Assistant,' etc.) While they may not have formal decision mandate, they have direct access to the calendars of leadership and can reveal when important meetings happen and what decisions will be made when.
- Presidents, Rectors, or Deans from other universities: As mentioned above inter-university competition can be a motivator for change. There can be collaboration, coopetition, or competition scenarios leveraged with external influencers.
- Members from Cooperatives, Research Consortia, NGOs: These in general can exert considerable influence on university leadership decisions by providing access to funding, facilitating collaboration, promoting knowledge exchange, influencing policy, and enhancing reputation and visibility.

In conclusion, understanding the diverse landscape of university governance structures and influential stakeholders is essential for effectively navigating the complexities of advocating for OS initiatives. Our discussions within the 2024 OS Retreat working group highlighted the variations in governance structures across universities. Despite these differences, certain recurring features, such as Executive Boards, Deans, and representative bodies, play critical roles in decision-making processes. Additionally, recognizing the influence of internal and external influencers, irrespective of seniority, underscores the importance of strategic engagement and collaboration. By leveraging this understanding, advocates can effectively champion OS issues and drive meaningful change within their institutions and beyond. Building coalitions with like-minded individuals and organizations further amplifies the impact of advocacy efforts, fostering a collaborative approach towards advancing the principles of OS on a broader scale.

How to affect institutional change

The Supporting University Change working group at the 2024 OS Retreat conducted a short group session and one-on-one interviews with other participants at the retreat to collect narratives on how OS issues were (successfully and unsuccessfully) brought up to university leadership. The working group reviewed these narratives and pulled out recurring themes summarized below. Figure 3 presents a word cloud of the most prevalent terms across the narratives.

Figure 3. Word cloud from experience narratives collected from OS Retreat participants

Key insights for elevating Open Science issues to university leaders

Universities are adapting to deliver high-quality education and impactful research amidst intensifying competition. By promoting OS in their strategic plans and research practices, universities can boost research quality, elevate their global reputation, and contribute significantly to knowledge advancement. However, establishing a communication channel for this change can be challenging.

Actionable practices - *Get yourself on the agenda*
Getting on the agenda of busy supervisors, deans, and rectors requires a bit of strategy and diplomacy. Some of our colleagues at the Open Science Retreat got on their rector's radar by nudging immediate supervisors, bringing up OS often and helping them understand how important it is. Before getting OS into the agenda, you want to map out a plan: is there a team to work on OS? Talk to colleagues who would also be interested in OS and provide names as part

of your plan. Try to establish connections with the rector's inner circle, which can be of great help as no one knows their schedule better. Depending on your situation, you might want to start with your department or faculty. In that case, collect as much evidence as you are able to from your environment, as there is nothing like solid proof to strengthen your case. Your head of department or dean will be more likely to make OS an agenda item if you show them the potential benefits and contribution to their own goals.

Make a good case for it - *You have made it to the agenda!*
As agendas of governance boards are busy, maximising the impact one has during their pitch requires a concise and memorable presentation on OS. One interviewee mentioned that highlighting that other ("rival") universities are already implementing specific facets incentivised the governance board to take a more proactive approach to not fall behind. As this requires other universities to engage in an OS practice, this approach can also be used in reverse to showcase one's university as the pioneer and innovator in OS.

Addressing OS in general may be too broad for governance boards to make an overall decision. Therefore, breaking OS down into multiple facets (i.e. Open Access) allows decision makers to understand the relevance and impact of each position. Leveraging the support network of key stakeholders in specific OS practices strengthens the presented case as the governance board will also interact with these stakeholders.

Be the change you wish to see - *Become an OS activist*
While getting to the university administration has been underscored as highly relevant, there are plenty of other things you can do to support the OS movement. Identify other OS enthusiasts around you and build a community where you can support each other. Most of the cases discussed here come from the vibrant [Open Science Communities in the Netherlands](#) that are advocating for change from within different universities . This is regarded as important because, as a community, you have the ability to leverage collective power and use it to influence decision-makers. Leading by example and being available to help your others practice OS will empower people around you.

In essence, navigating the complexities of promoting OS within universities demands strategic planning, effective communication, and collective action. By adopting proactive approaches and fostering community engagement, advocates can advance the OS movement and catalyze transformative change within higher education institutions.