

Information specialists supporting the information value chain

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Abstract:

Information specialists have traditionally been supporting the information needs of their organisations: providing collections and training, so the users of information services have been well-equipped to tackle information intensive work and solve research problems. Another important role has been the management of publication registries, ensuring that information produced by their organisations have been carefully documented and preserved.

These roles are still relevant, but they need to be expanded to support the whole process of information value chain the parent organisation creates for the surrounding society. This requires information services to also identify the support systems for tacit knowledge of the specialists and researchers who are the source of information and knowledge produced by the organisation.

Knowledge and information management are not activities, that could be a responsibility of a single organisational unit, so it is important to identify the exact access points, where the actions to serve the information value chain should be taken. In the Finnish Environment Institute, one of the enabling objectives for our strategy is to develop the whole value chain of environmental information. For the Information Services, this means identifying suitable access points to serve our information value chain.

These actions include providing the information base for research projects; supporting research data management and open science; developing the institutional publication repository with richer metadata, content and altmetrics for tracking the impact; ensuring the visibility of publications in national portals; helping with the identification and visibility of researchers for the scientific advice for policymakers.

These actions collectively ensure, that our information services unit serves the information value chain of our parent organisation and challenges the professional development of our specialists. This paper discusses the actions information specialists have to take and the challenges they face when claiming their role in relevant stages of the information value chain.

Keywords: Information specialists, information services, information value chain, open science.

Introduction

Information services and information specialists are facing huge challenges due to the changes in working environments and societies. Increasing digitalisation, growing user skills and adaptation to use different information sources, and information retrieval being part of everyday life, means that our professional skills are needed a step further in the information value chain to stay relevant.

The concept of information value chain as a process helps to create the big picture for information specialists, where the data to information, knowledge and wisdom -value chain can show us, how we can support both the explicit and tacit knowledge. There are very practical actions where we can find both traditional work tasks for our profession, as well as new areas, where a bold step further will be required.

One useful thought, when taking an approach from collection management and explicit information sources to managing or helping to manage tacit knowledge, is to see people as information sources. Many organisations and individuals are using skill and knowledge portals to bring front their expertise and interest areas, and this is one area where information specialists could have a larger role. We should see people and the interaction between them as new information categories.

In Finland, even high officials are playfully saying that they would need a “Researcher-Tinder” to be able to connect to the most relevant person for their problem solving or when in a need to understand a complicated issue, where no ready-made answers are available. Maybe we could be part of that pairing, as we have means to manage both published information and the knowledge profiles of individuals - and we also have the ability to understand and analyse information needs.

Information value chain – from data to knowledge

One of the classic concepts of information research is the value chain of information, where the flow of information is seen as a process, starting from raw data, and transforming to information, then knowledge, and ultimately to wisdom. For this to happen, the value chain requires value creation, which takes place as an interpretation and use of information, creating common understanding of both the problem and the answers to be found, representations and synthesis, and encouraging others to take action in these processes.

The multifaceted nature of information value chain is even more complex when we are approaching problems, that are not clearly defined. These can be called “wicked problems” and the information support needed to solve these kind of challenging, ambitious problems, needs the approach of a knowledge brokerage. The concept of knowledge brokerage has born from the scientific community’s need to increase the impact of scientific knowledge. In practice, this role can be accomplished as an intermediary organization or person, bridging knowledge production and decision making. (Hellström et al., 2019.) In practice, for the information services field, the role of “information interpreter” has been brought forward, but the actions to take this role has not yet been that common in the information services field – at least for the authors knowledge.

One of the future skills required for information specialists would be the ability to do knowledge synthesis or representations quickly, in an effective and user-friendly manner. We do have a wide and deep experience for conducting information searches, so taking a step further and adding more interpretation and synthesis for the search results would be like an icing on a cake. It would be more tempting to seize that piece of information.

Actions to support the information value chain

In organisations, knowledge and information management are not activities, that could be a responsibility of a single organisational unit, so it is important to identify the exact access points for each actor, where the actions to serve the information value chain could be taken.

In the Finnish Environment Institute, one of the enabling objectives for the organization’s strategy is to develop the whole value chain of environmental information (SYKE, 2022). For the information services unit, this means identifying suitable access points to serve that value chain, from raw data to information and knowledge use.

When information value chain is clearly defined in the organisation, it is much easier to see everyone’s part in supporting that value chain. For information services, the value chain approach also defines the different information types and formats, from data to knowledge, publications to people, that could benefit from our support and the holistic approach.

The actions to support the information value chain from information services include the following:

- providing the information base for research projects
- supporting research data management and open science
- ensuring the open publication of research results and institute’s other reports
- developing the institutional publication repository with richer metadata and content
- using altmetrics for tracking the impact of publications
- ensuring the visibility of publications in national portals

- participating in developing the metrics to measure publication productivity and impact
- helping the identification and visibility of researchers and experts for the scientific advice for policymakers.

These actions collectively ensure, that our information services unit serves the information value chain of our parent organisation and challenges the professional development of our specialists.

Some of these are familiar actions for information services, and when described from the angle of information value chain, might bring more meaning to everyday work. For some of these actions, we need to take a leap forward, maybe even stepping on someone else's toes, but when done for the greater purpose, we will see both personal growth and new opportunities for collaboration – especially, if we can prove our value in the process. These new functions may also strengthen the operating conditions of the information services in digitalized and networked world.

Supporting information use in the science advice processes

As the value chain of information is already well supported in its data and information stages, more emphasis would be needed to support the information and knowledge use, the real-world impact of the research results and knowledge produced.

The question is, what kind of information and knowledge is needed, where, by whom and in what type of format, interaction and processes. With wicked problems, we no longer have simple question and answer type of challenges, but more complex issues of defining problems, developing collective understanding of the issue at hand, seeking answers, and considering impacts of the actions to be taken.

With the increase in the complexity of information needs, a new approach is needed to support the use of information: information support should be transferred to dialogue-initiating and participatory information support (Hellström et al., 2019). In the field of research support services, such as information services provided by research institutes, consideration should therefore be given to how one's own activities can support the processes of scientific advice.

Although the tools of scientific advice, such as science panels and science sparring, are interactions between researchers and policymakers, it would also be important to be aware of the demands and opportunities that support for science advice brings to the field of information services. We can participate in these processes by supporting researcher findability and open science.

Ensuring researcher findability

Support for scientific advice might be a less familiar concept for many information specialists. This activity is often in the hands of consultants and think tanks, but we could also play our part on that field, as we have all the means for supporting the use of research results.

Societal problem solving requires reliable, relevant research results that are produced by scientific research. Their availability should be brought for policymaking with the required speed, providing also the opportunity to assess the reliability of the results and the effectiveness of the measures to be taken. (Hellström et al., 2019; Kuosmanen & Sivonen, 2020; Saarela, 2020.) These activities could be supported by open science, covering both open data and open publishing, but also providing knowledge syntheses and information visualizations.

In Finland, the processes of science counselling have been developed by Sitra's Knowledge in Decision-Making project (Hellström et al., 2020) and the Science Advisory Project Sofi (Kuosmanen & Sivonen, 2020). The activities of scientific advice include science sparring, research panels, the activities of scientific clubs, committees and advisory boards, and the research partner -activities of the Parliament (Kuosmanen & Sivonen, 2020).

For these activities, the support provided by information services and information specialists could be, at minimum, providing comprehensive knowledge profiles and publication and activities lists of the organization's researchers and specialists, and in so doing, helping them to be found by the policy makers, societal actors, media, and others needing their knowledge.

Open science as the main agenda in supporting information use

One of these opportunities is to promote the discoverability of research results and publications and to ensure their open access. When discussing access to information, attention usually turns to the libraries of research institutes and universities. Support for open science is therefore a key area of action for the information services and libraries of research organizations.

The expertise and reporting tools of information services can both support open publishing and open science, but also examine the visibility and effectiveness of an open science culture. By ensuring open publication of scientific articles, research results have been made easily accessible to decision-makers and citizens. With open science, also the evaluation of scientific results and ensuring the reliability of research is possible for a wider audience.

Supporting the visibility of researchers and research projects is the traditional field of activity of information services, especially when placed in the context of research support. This also lays the foundation for the accessibility of open research results. Supporting an open science culture will also support opportunities for discussion between researchers and decision-makers.

Supporting open publication, data transparency and open science culture makes way for the discoverability, availability, reuse and reliability of research data. By enabling open access to information, the effectiveness of research projects and the use of information in societal decision-making will be strengthened.

The processes of science advice can be supported by open science, identifying relevant researchers and specialists for specific tasks and by the accessibility of research data and publications – so that everyone can also validate the research results and assess the knowledge base.

With simplifying a little, by supporting open science, every librarian and information specialist supports the global collection of scientific, research-based results, data and knowledge, to be used in all societies for solving global and local problems.

Challenges and how to tackle them

When approaching new fields, it is inevitable to face also challenges. The common perception of information specialists working in institutional libraries has seen the profession more as serving the parent organisation, not reaching outside of its borders.

The new role, that goes beyond the organisation's borders, might surprise other actors working in similar areas of the information value chain. Therefore, it would be beneficial to clearly describe the whole information value chain the organisation produces, and the actors and the access points for each. This work would be best to accomplish as a shared process involving all the participants – even if it would mean involving everyone in the organisation.

By establishing a common understanding of the value chain and describing different actor roles in the processes, the organisation can also support creating understanding of the greater meaning for different, separate work tasks. This helps everyone to see their role in the fulfilling the organisations greater goals and even seeing their part in the surrounding society.

Conclusions

Information specialists and government information services – as well as all information services and libraries in research organisations - have a lot to offer for both the parent organisations and the societies we are working for. Our exceptional skills and understanding of information processes and different information formats could be useful in many parts of the information value chain.

No one is going to ask us to join these discussions if we don't take the action ourselves. Therefore, I would encourage everyone to draw out the information value chain they are supporting and define the access points, where information support would be needed. Even in those areas, where no one has not yet asked us to help out.

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