



PIDs for digital content: Are they used as they should be? The example of DOI and ORCID, told from a research library perspective

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For finding, linking and citing research content, persistent digital identifiers are the key, as a persistent identifier is a long-lasting reference to a resource. But are PIDs really used as they should be?

With respect to the obstacles of the PID systems, we face a diverse landscape of stakeholders, legacy systems, competing interests and often incomprehensible messaging filled with technical jargon around PIDs. Insufficient metadata quality is another major challenge for these systems. While the principal task for service providers lies in collaborating to provide a shared and easy to use PID infrastructure, it is the key responsibility for data centers to provide rich metadata and structured access to research content. Especially metadata and structured access are imperative for the most basic services such as search, citation tracking and reuse. And of course all needs to be human- and machine interoperable, as we want our machines to be able to interpret PIDs depended on a specific use case. Since 2004, the German National Library of Science and Technology (TIB) has been providing DOI services to data centers in Germany. Recent developments make clear that requirements for PIDs have changed. Science has developed a need for PIDs at multiple content levels: In addition to DOIs for journal articles and research data, PIDs for people, physical objects, collections, software, funders, organizations, expeditions, resources, instruments and even for data management plans are required to enable different platforms to exchange information consistently and unambiguously.

In this work we want to emphasize on the distinct increases of total DOI registrations for research data and other research output such as images, videos or software in Germany within the past decade and how research institutes and universities differ in their DOI registration workflows. We present use cases which illustrate the deployment of DOIs e.g. for dynamic data, and demonstrate the need of rich metadata for a successful performance of user services. Along with a broader acceptance of DOIs for research content beyond articles, institutes are faced with the challenge of providing appropriate recognition to their researchers for their published work. To promote this, the ORCID Germany Consortium was launched in October 2016. The consortium, administrated by TIB, is an essential building block of the ORCID DE project with the goal to facilitate the distribution of researcher IDs in Germany. An ORCID (Open Researcher and Contributor ID) provides scientists with an unambiguous identifier, enabling them to distinguish themselves from others, while at the same time simplifying the management of their research activity records (e.g. publications of papers, dissertation, research data, software, and attended conferences). ORCID Germany Consortium member institutions are able to link their academic records to the ORCID identifiers of their researchers and benefit from up-to-date and complete publication lists. DOIs and ORCIDs, if used correctly, are both machine-interoperable PIDs which not only make research more accessible, but also increase the visibility of all outputs of research, the researcher and the affiliated institution.