"In the eye of the beholder": Knowledge and skills requirements for data professionals

Purpose

It is proposed that the professionals required to work in data science, data librarianship and data management are a "new breed" for whom the knowledge and skills requirements are just emerging (Davenport & Patil, 2012; Provost & Fawcett, 2013). It has been suggested that academic institutions are putting together courses to address this shortage without fully understanding what the knowledge and skills requirements are for data scientists, analysts or managers in different types of organisations (Provost & Fawsett 2013). Organisations need data librarians and managers to enable better use, management, curation, and preservation of data and to explore data reuse, aggregation and sharing. This need is evident in universities and research organisations as well as in business and government organisations (AGIMO 2013; Corrall, Kennan & Afzal 2013). The purpose of the proposed paper is to investigate the knowledge and skill requirements for people working as data professionals. This paper will build on an earlier paper which looked at requirements in universities and scientific organisations (Kennan 2016) to include the requirements of business and government organisations.

Approach

In 2015, 36 data librarians and the employers of data librarians and other data professionals in organisations (business, government, universities and research and/or scientific organisations) in Australia were interviewed. Participants included people working with data from libraries, data and information management and technology departments. The interviews addressed the following questions:

1. Where, and it what roles, are data librarians, managers and scientists likely to be employed;
2. What knowledge and skills are required of people working in data librarianship and management roles; and,
3. What are the educational and training requirements for data librarians and data managers?

In interviewing data professionals and their employers this project focussed on building understanding between practitioners and educators. Thus the research to be reported in this paper will report on what practicing data librarians and their employers see as the key knowledge and skills for data librarians.

Findings

The findings indicate that there is a huge range of titles and roles in the data space. In all the most common set of skills required were interpersonal skills and related personal characteristics, closely followed by data specific knowledge and skills, including broad understanding of data types, metadata, and legal and regulatory frameworks. Contextual knowledge, knowledge of appropriate information technologies and training and advocacy skills were also highly sought after. In universities and research organisations very few current data professionals had a data specific qualification, most had learned "on the job" and through targeted professional development such as workshops, webinars and in house training. In business and government, more data professionals were expected to have either an IT or analytics qualifications and there was increasing demand for these skills.

Value

This paper presents information specific to data professionals in context and will enable educators understand the professional context and therefore to more effectively plan appropriate forms of delivery. It will also enable professionals to understand the variety of different data roles available and the knowledge, skills and qualifications required for each.

References

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