

Chapter 8

Information Sources and Collection Planning for Engineering

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ABSTRACT

This chapter will provide background for practicing librarians who have collection development responsibilities for engineering programs at academic institutions. Although it is intended as a resource for all engineering bibliographers, new librarians or those new to the technical fields may find it especially useful. Engineers (and engineering students) use information quite differently than other disciplines, and this can make collection development a daunting task. Furthermore, it is common for librarians with no background in engineering or technology to be assigned to manage the engineering collection. The information and tips contained in this chapter are meant to make this job easier.

INTRODUCTION

A few years ago at a conference session for engineering subject selectors, the members of the audience were asked how many of them had a background in engineering. Fewer than half raised their hands. Although far from a scholarly study, this illustrates a situation common in academic libraries. Many librarians are asked to manage collections in engineering and technology although they have no academic background in the subject.

Librarians in this situation face two major obstacles to success: learning how engineers use different types of information and becoming familiar with the language of engineering.

The purpose of this chapter is to help both new and seasoned engineering librarians improve their collection management skills; however, it will be of most use to those new engineering librarians who do not have a strong engineering background. Various formats of engineering resources will be discussed. Some formats such as monographs and

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journals are common to all disciplines, but the way engineers use each of these resources differs from other areas of research. Other resources like patents and grey literature may be less familiar. Both society and commercial publishers are major providers of engineering information, so each type of publisher will be discussed.

Next, the chapter covers how to determine information needs and the process of creating a collection development policy. No two engineering programs are the same, and as a result no two collections should be developed in the exact same way. Engineering has several sub-disciplines (e.g., civil, mechanical, electrical, chemical, and aeronautics), each of which may have its own focus. Just as professors split their efforts between teaching and research, the library's collections must support student learning and the research efforts of students and faculty, and collection development policies should cover the needs of both aspects. The teaching component is driven by the courses and degrees offered, while the research component is driven by faculty research interests, in conjunction with the focus of any research centers that are part of the institution.

Even if a formal collection development policy exists, periodically reviewing the institution's teaching and research efforts facilitates efficient collection management. This process usually gives the librarian more detailed information than is included in the written policy and encourages consistent updates to the policy. Libraries may have institution-wide policies, both formal and informal, which should be incorporated into the engineering collection development policy. (Is there a preference for electronic versions wherever possible? What are the budgets for books and serials?) Librarians should also keep in mind that engineering research is becoming increasingly interdisciplinary in nature. It is not uncommon for a research topic to be shared with another discipline in science or even a social science area.

Near the end of the chapter, the authors will discuss issues and challenges such as creating

buy-in for open access initiatives and dealing with the inevitable journal cancellation projects resulting from ever-increasing subscription prices. Throughout the chapter, collection development tips gleaned from the literature or from the authors' experience will be discussed. A special section of tips for new engineering librarians is also included.

BACKGROUND

In his monumental paper on the information-seeking habits of engineers, Thomas Pinelli pointed out that in order to meet library patrons' needs, librarians must first "become familiar with the information-seeking habits and practices of the user" (Pinelli, 1991, p. 5). He goes on to explain that when engineers are using information they are really seeking answers. The end is what is important to them, not the journey. If they do not have ready access to the information they will first go to colleagues (Lord, 2000), and then move on to searching the literature when other avenues are exhausted. In 2006, Williams and Fletcher analyzed citations from engineering master's theses. Their study showed that while journals are used most heavily, books, conference papers, government documents, and other resources are also widely cited across several engineering disciplines. Websites also received a significant number of citations. This again shows that engineers are more concerned with the answers than which source they use to find them. Kirkwood (2009) found remarkably similar results in her study of civil engineering theses and dissertations.

Engineers were early adopters of electronic libraries. Holland explains that "the corporate engineering library is no longer a physical location. Instead, it is a desktop information system or set of systems bundled together" (Holland, 1998, p. 40). A later study of engineering students and faculty shows that while the physical library is still valued in academia, electronic resources are becoming heavily consulted (Li & Baer, 2009). A

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