Responsibility and Skills Requirements for Entry Level Analytics Professionals

Wenhong Luo, Villanova University, Villanova, PA, USA

ABSTRACT

As companies continue to incorporate analytics into all aspects of their business, there is a growing demand for analytics professionals with the right mix of skills and experiences. This study examines the responsibilities and skill requirements for entry level analytics professionals by analyzing the job ads posted on three major job sites during a six-month period. The author’s results show that companies expect entry level analytics professionals to work with a team and to contribute in early stages of analytics work. In terms of technical capabilities, companies stress the general abilities to work with data, including the use of database and spreadsheet tools for organizing, analyzing, and reporting data. Surprisingly, data mining, optimization, and other advanced analytical methods are not often listed as desired skills for entry level positions. The study can help universities and institutions in curriculum design as well as in working with the industry to define and guide the development of skill requirements.

KEYWORDS

Business Analytics, Content Analysis, IT Users, Skill Requirements, Text Mining

INTRODUCTION

As companies continue to incorporate analytics into all aspects of their business, there is a growing demand for a new breed of professionals with a unique mix of analytical skills and experiences. Analytics professionals need to integrate business knowledge, analytical methods, and IT resources in order to deliver analytical solutions for the enterprise. They are often the power users of ERP and CRM systems and the owners of Business Intelligence systems. At a first glance, individuals with background and training in fields such as statistics, mathematics, computer science, information systems (IS), and operations research (OR) all seem to have the necessary analytical aptitudes to take on the tasks and responsibilities of analytics. However, studies have shown that the skill requirements for analytics could be quite different from the skill requirements of those trained in the aforementioned disciplines. For instance, Liberatore and Luo (2013) compared the technical and soft skill requirements between analytics and OR professionals and found significant differences in the relative importance of data management and business process-related skills. Recognizing this gap, universities and colleges are establishing new undergraduate majors and minors as well as graduate degrees in business analytics to better prepare students to enter the analytics field. Professional associations such as INFORMS are rolling out training and certification programs to update the skill set of those who are interested in new career opportunities in business analytics. The success of these efforts in preparing a new generation of analytics professionals is dependent upon how well the curricular match with the industry needs. Therefore, it is crucial to have regular check-ups on the pulses and trends of the skill requirements demanded by the industry.

DOI: 10.4018/JOEUC.2016100101

Copyright © 2016, IGI Global. Copying or distributing in print or electronic forms without written permission of IGI Global is prohibited.
One useful way to track the kinds of skills that are in demand is the analysis of job ads. Content analysis of job ads has been applied to study job and skill trends in several business disciplines (e.g., Lee and Han, 2008; Mar-Molinero and Xie, 2007; Sodhi and Son, 2008; Sodhi and Son, 2010; Todd, McKeen, and Gallupe, 1995). Compared to focus groups, interviews, and surveys, content analysis of job ads has a number of advantages in determining industry requirements. First, job ads provide a better gauge of skill requirements because they reflect the true demand instead of hypothetical scenarios used in surveys and other methods. Second, analysis of job ads can be performed more frequently to track the most recent trends and changes in skill requirements while it is impractical to conduct repeated surveys in a short time span. Given that business analytics is an emerging field, it is especially valuable to monitor the changes taking place in the industry. Finally, a discussion of skill requirements must be linked to the responsibilities as analytics professionals can take on a number of different roles in an organization (Davenport, Harris, and Morison, 2010; Liberatore and Luo, 2010). A candidate applying for an executive position in charge of the analytics function would be expected to take on very different responsibilities and thus should possess different skills than one applying for an entry level position. Job ads usually contain a detailed description of both responsibilities and qualifications so skill requirements can be analyzed with respect to corresponding job responsibilities.

This study examines the skill requirements as well as responsibilities for entry level analytics professionals by analyzing the job ads posted on three major job sites during a six month period. The reason our focus is on an entry level position is because many of these positions are traditionally filled by new college graduates and training programs. The study can help universities and institutions in their curriculum design so that they provide their students with the right mix of skills before entering the job market. More importantly, the analytics field is at a formative stage so it is instrumental that universities and institutions work with the industry to define and guide the evolution. This study can assist those who are interested in pursuing a career in analytics to evaluate whether these kinds of jobs fit their personal interest. In the next section, we provide a review of skill requirements for analytics professionals. Section 3 discusses the methodology used in this study. The results are presented in Section 4, followed by discussions.

**SKILL REQUIREMENTS FOR ANALYTICS PROFESSIONALS**

One of the challenges in building a successful analytics program within organizations is the acquisition and retention of analytics talent and the building of a fact-based decision making culture (Davenport, Harris, and Morison, 2010). Thus, it is crucial for organizations to identify those candidates with the right skill set during the hiring process. At the same time, potential employees need to know what employers are looking for so that they can plan their education and training in order to pursue a productive career in analytics. Since analytics is a relatively new field, it is informative to review the skill requirements in fields that also require strong analytical acumen such as information systems and operations research. This is especially relevant given that analytics is at the intersection of these established fields.

There is a stream of research on skill requirements in the IS literature over the past 20 years (See Wilkerson (2012) for a review). While most studies examined skill requirements and gaps by surveying students, alumni, employers, employees, and educators, a number of studies analyzed the contents of job advertisements from newspapers and corporate websites. Todd, McKeen, and Gallupe (1995) analyzed newspaper ads spanning 20 years to determine how the skill requirements had evolved for programmers, system analysts, and IS managers. They classified skills and knowledge needed by IS professionals into three knowledge groups: technical knowledge, business knowledge, and system knowledge. Technical knowledge included skills and knowledge related to computer hardware and software. Business knowledge consisted of functional and industry expertise, leadership and project management skills, and social abilities such as interpersonal and communication skills. System knowledge referred to problem-solving capabilities and knowledge about system development.
Information Resources Management for End User Computing: An Exploratory Study
www.igi-global.com/article/information-resources-management-end-user/55687?camid=4v1a

A Visual Code Inspection Approach to Reduce Spreadsheet Linking Errors
www.igi-global.com/article/visual-code-inspection-approach-reduce/3756?camid=4v1a