Data Analytics in the Marketplace: What Are Organizations Looking for?

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As the discipline of intelligence in business continues to evolve, so too, has the field of data analytics. For many business intelligence positions, the skill sets to analyze big data is part of the job description and remains in high demand. This spring, Mercyhurst University announced its new school, the Tom Ridge School of Intelligence Studies and Information Science. Research has ensued to develop curriculum that consists of the foundation of intelligence theory along with the real-world needs of the market place. In the spirit of the new school, the following paper represents just some of the research that Mercyhurst is conducting to determine what business organizations are looking for in regard to business and data analytics positions.
BIG DATA AS A REQUISITE

While big data sometimes seems like nothing more than this year’s business buzz word, companies large and small are looking into data analytics for streamlining everything from the hiring process to understanding customer preferences. Despite the enthusiasm behind big data adoption, companies face a number of challenges along the way, including limited budget, development time, and the limited availability of skilled employees to manage and analyze data. Human resource departments are struggling to identify what adds up to the ideal data analyst candidate for their company when previous experience and academic background hardly add up to the new trend in big data exploitation.

Luckily for human resources, academic institutions are looking to fill the void and graduate the skilled employees that big data seekers need. Universities nationwide are developing data analysis degrees, graduate programs, and research centers aiming to train the next round of job applicants. While a number of programs exist, the question is whether they are teaching the skills and tools that hiring managers are seeking? Are business and data analyst students any better off than graduates from liberal arts or technology programs?

This article provides a brief overview concentrated on skills, experiences, and backgrounds hiring managers are currently seeking from data analyst candidates with an expectation that these trends will continue. The research was accomplished by monitoring hundreds of vacancy announcements from three major US cities for integral aspects such as desired degrees, experience required, and knowledge bases. Using the results of this research, academic institutions can now fine-tune their curriculum to ensure that graduates leave with the necessary skills to enable businesses to succeed in their big data adoption.

METHODOLOGY

Researchers at Mercyhurst University created a database of online job classified listings meeting the criteria of graduate- or senior-level data analysts from December 2013 to January 2014. New York City, San Francisco, and Chicago were identified as the top cities having the highest concentration of Fortune 500 companies in the United States. These companies represent the leading employers adding data analytics to their toolbox through designated personnel and software utilization (Brown, 2014; Gregg, 2014; Farina, 2012).

Listings were pulled from the major job classified websites Indeed.com, SimplyHired.com, and Monster.com; these sites were highlighted by Forbes as part of their top “10 Best Websites for Your Career list,” behind LinkedIn (Adams, 2012). According to Forbes, these three sites primarily serve as job aggregators with the ability to search job listings quickly and efficiently, unlike other sites on the list that are industry-specific or primarily used for other purposes such as social media or information services.

From these three sites, researchers used the terms “business analysts” and “data analysts.” A 2013 WANTED Analytics report found the most commonly advertised data analysis job titles were “business analyst” and “data analyst,” followed by “financial analyst,” “project manager,” and “business systems analyst” (Lombardi, 2013). The search was run within the exact location or city limits, of the three cities of interest on Indeed.com and SimplyHired.com. The analysts used Monster.com’s smallest search area, or within 5 miles of the cities of interest, as it did not have an “exact location” option.

Up to 50 of the most recent job postings related to “business analysts” were taken from each site in each of the three cities, totaling 421 results between December 2013 and January 2014. The analysts repeated the process for the term “data analysts,” recovering 421 listings, for a total of 735 listings surveyed. Duplicates of the same position on multiple websites were removed, bringing the surveyed results down to 732. Some cities or websites provided fewer than 50 results each, resulting in a discrepancy between the anticipated collection tally (900) and the final collection (732). For instance, Monster.com always provided the fewest results using both terms “business analyst”
and “vacancy analyst.” Overall, Indeed.com provided the most vacancy announcements, with the exception of data analyst positions in Chicago and San Francisco where SimplyHired.com linked to the most vacancies.

This round of research focused exclusively on positions requiring an advanced degree or prior job experience. Two hundred and three unique results remained after analysts established the following inclusionary requirements: minimum three-years of experience in business or a specific tradecraft, including but not limited to software development and quantitative analysis, OR containing the terms “senior,” “manager,” “management,” “level 2”/”level 3”/”level 4,” “tier 2,” “lead,” or “vice president” within the job title.

The database organized job postings by relevant information including job title, salary, location, and when available, the hiring company’s name, industry, and division with the open position. For further analysis, the researchers classified fields related to the job’s typical duties and day-to-day responsibilities: required/desired skills, previous experience, licenses and certification; required/desired computer skills; and degree requirements.

RESULTS

HIRING PROCESS

During the research process, New York City revealed the highest number of job postings for business and data analysts, accounting for 41 percent of the vacancies studied. Across the locations surveyed as well as across job aggregator sites, hiring managers sought applicants using the term “business analyst” more than twice as often, with 69 percent of all vacancies studied appearing under the “business analyst” search term.

Job Titles

Hiring managers advertised job vacancies for business and data analysts under 16 unique categories of job titles. Six of these categories included modifiers or descriptors that made the jobs more industry-specific, such as Risk Data Analyst or Peoplesoft Business Analyst. These positions are described as “functional titles” in the chart above. Eight of these categories included positions designated as senior position titles through the use of terms such as Senior Data Analyst, Lead Business Analyst, or Vice President Senior Business Analyst. The most significant titles within the “Other” category included Project Management Business Analyst, IT Business Data Analyst, and Database Analyst. These titles were typically listed as non-supervisory positions.

Hiring industry

A wide variety of industries are currently seeking business and data analysts. Of the 159 postings where the hiring company was disclosed, the financial industry accounted for almost half, while information technology accounting for an additional 22% of vacancies. Smaller players included insurance, marketing, media, consulting, software, healthcare, and education.

Corporate structure

Within these industries, the analysts identified trends in where these positions were housed within a company’s corporate structure. Over one third of
business analyst positions are housed within the information technology division of a company at 22%, followed by marketing at 20%. Data analyst positions, on the other hand, typically sit in business or competitive intelligence or analytics, marketing, or regulatory divisions.

**REQUIRED EXPERIENCE**

Both positions advertised as business analysts and data analysts called for at least two years of experience in related fields. The experience desired was similar across a few fields, including business and SQL.

Candidates for business analyst positions typically need to demonstrate more experience in business fields than their data analyst counterparts. Vacancy announcements for these positions often required five years of experience, though three to four years of experience accounted for almost an additional 60 vacancy announcements. Hiring managers considered experience in fields related to consulting, finance, insurance, project management, Six Sigma, information technology, business analysis, healthcare, and customer relationship management.

Hiring managers for data analyst positions typically sought candidates with two to five years of experience in a related field, peaking at 3 years of experience. Experience in data analysis, SAS, databases, Microsoft Access, and Microsoft Excel were most desired.

**DESIRED DEGREES**

While higher levels of experience were commonly sought by hiring managers, candidates for both business analyst and data analyst positions only needed to possess a Bachelor Degree, accounting for 95 and 40 vacancy announcements, respectively. While hiring managers sought candidates with a Master Degree for 44 positions, of which only 8 specified a preference towards an MBA.

Academic concentration in Computer Science proved to be the most versatile, as advertised in 49 of the business analyst positions and 20 of the data analyst positions. However, the business analyst positions more often called for concentrations in business administration, an area of little importance for data analysts.
HARD SKILLS

Across the board, employers sought candidates with computer skills in SQL, Microsoft Office – particularly advanced functions of Excel – and enterprise resource planning. Data analyst positions more heavily favored SQL than Microsoft Office; however, business analyst positions sought the reverse. Web and business intelligence knowledge were important for both position types as well, with business analyst positions also calling for development methods and data analyst positions calling for programming experience.

Within these broad skillsets, Excel stood out as the clear program to know, mentioned specifically 47 times in business analyst vacancies and 31 times in data analyst vacancies. Oracle topped the charts for ERP programs in both business and data analyst positions. There was no clear application of SQL that hiring managers sought above all others.

SOFTWARE SKILLS

This research suggests that though both positions require specific computer knowledge, hiring managers are looking for well-rounded candidates who above all else possess valuable soft skills, namely communication, analysis, financial knowledge, problem solving, and the ability to work both independently and on teams. In addition to higher volumes of listings requesting soft skills, the list of desired soft skills far exceeds that of the technical abilities requested in vacancy listings, as demonstrated in the following figure.
CONCLUSION

The ultimate goal of this research is for companies to directly impact the curriculum that prepares budding analysts for success in Data Analytics while also aiding new analysts to find opportunities where they can best exploit their skills. The successful development of Data Analytics degree programs relies on tailoring course offerings, lectures, and internship experiences to meet the real-world applications and expectations outlined in this paper.

This research indicates that while companies more frequently advertise vacancies as “business analysts,” job seekers would benefit from using both “business analyst” and “data analyst” in searches. Financial and information technology industries currently offer the most opportunities in this field, indicating educational institutions should encourage students to develop a background in perhaps nontraditional fields beyond data analytics. Candidates with advanced degrees or work experience fair better across the industries with most companies preferring candidates who possess five or more years of work experience, though some consider three or more years of experience satisfactory. Skills and experiences such as business acumen, SQL, computer science, and business administration are sure to contribute to the success of data analysts, though a wide variety of opportunities exist for analysts with other hard and soft skills. This paper touches on only three major cities with the two titles of business and data analytics and only marks the beginning of the process; hopefully, this research provides some insight into understanding what the market demands and what business organizations are looking for in the pursuit of their ideal candidate for business or data analyst.

REFERENCES


Mary Kate Daley is a Masters candidate in Applied Intelligence at Mercyhurst University. She has worked as an analyst advising companies in business expansion, brand reputation management, and personnel security with the Center for Intelligence Research Analysis and Training. Mary Kate has research interests in employing open source data analytics in unique ways and is completing a Masters thesis employing content analysis to identify indicators of crime online.

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