Business Data Roles and Companies
By Daniel Egger, Duke University
Business Metrics for Data-Driven Companies

Matching Job Titles to Required Skills
(based on review of US help-wanted advertisements, and interviews, by Daniel Egger, June 2015)

	Skill	"Business Analyst"	"Business Data Analyst"	"Data Scientist"	"Senior Software Engineer" / "Technology Project Manager"		Taught in *Excel to MySQL*: *Business Analytics Techniques* 4-Course Specialization
1	Identify critical business metrics (will be industry-specific)	Yes	Yes	Yes	No	1	YES Course 1
2	Find and apply appropriate models for each metric	Yes	Yes	Yes	No	2	YES Course 2
3	Evaluate the effectiveness of models used	Yes	Yes	Yes	No	3	YES Course 2
4	Interview "clients" to define project requirements ("client" may be internal to the Corporation)	Yes	Yes	Yes	No	4	YES Course 3
5	Excel skills - import data sets, run analyses, and display results using charts and graphs	Yes	Yes	Yes	No	5	YES Course 2
6	Presentation Skills - effective verbal and written communication skills	Yes	Yes	Yes	No	6	YES Course 3
7	Data Visualization Skills with Tableau	Yes	Yes	Yes	No	7	YES Course 3
8	Able to identify new ways to combine business data to achieve business process improvement	No	Yes	Yes	No	8	YES Course 4
9	Ability to "pull" needed data and recombine it using SQL Queries	No	Yes	Yes	No	9	YES Course 4
1	Modeling Tools: R, Matlab, or SAS - intermediate to advanced skills in at least one	No	No	Yes	No		
2	Advanced Statistical Methods	No	No	Yes	No		
3	Bayesian Learning and Probabilistic Models; Machine Learning for Algorithms for Predictive Analytics	No	No	Yes	No		
4	Ability to populate and optimize SQL Databases - design basic relational database schemas	No	No	Yes	Yes		
5	Python, Java, and Javascript	No	No	Yes	Yes		
6	Experience Managing distributed/unstructured data - using Hadoop/Mapreduce/Hive/Spark	No	No	Yes	Yes		
7	Natural language processing - text sentiment analysis	No	No	Yes	Yes		
8	Experience with Amazon Web Services (AWS) or other equivalent cloud-based data-hosting and processing services	No	No	Yes	Yes		
	C++ or eqivalent	No	No	No	Yes		
	Experience with Oracle, Teradata, or other large commercial databases or low-latency cloud-based database structures	No	No	No	Yes		
	Experience Leading Data Analytic Teams	No	No	No	Yes		
	Project Management, Budgeting and Planning Experience	No	No	No	Yes		
	Experience integrating real-time data feeds	No	No	No	Yes		

The Relative Demand for Data-Centric Employees by Job Title in the Five (5) Types of Companies
Categories of Companies - a subjective representation of relative hiring rates in each of the 4 job categores above
(results ranked by their relative need in each category for Business Analysts & Business Data Analysts)

	"Business Analyst"	"Business Data Analyst"	"Data Scientist"	"Senior Software Engineer" / "Technology Project Manager"
Traditional Strategic Business Consulting - General Examples: Argus, Comscore, Deloitte Consulting, McKinsey	30%	40%	20%	10%
Traditional "Bricks and Mortar" Businesses Examples of Companies Using Best Practices: Bank of America, Costco, UPS, Walmart	20%	30%	30%	20%
Strategic Business Consulting - with a focus on Software and IT Systems Integration Examples: Accenture, Opera Solutions, Palantir	10%	20%	30%	40%
Hardware & Software Companies Hardware: Intel, AMD, Cisco; Enterprise Software: IBM, Oracle,SAP; Commercial Desktop Software: Microsoft, Tableau, SAS,Matlab.	10%	10%	30%	50%
Digital Businesses Examples: Airbnb, Amazon, Facebook, Google, If(We), Zillow	0%	10%	30%	60%