Week 2- Working in the Business Data Analytics Marketplace

1/ Data Scientists most often enter into that position by:

○ No experience other than an aptitude working with quantitative data is required

○ Earning a masters degree in data science

◉ Starting as a Business Analyst and gaining experience and additional technical skills on the job

○ Earning a doctorate degree in statistics or computer science

2/ Why is it important for Business Analysts to have "local knowledge" of business sectors?

◉ Business Analyst typically work in a specific business sector, such as insurance, and every sector has specialized metrics developed for that sector.

○ Clients expect Business Analysts to be able to discuss their specific business environments in detail

○ Client provided data typically only contains "local knowledge"

○ All of the above

Correct: The video *The Business Analyst* at 0:47-2:03 explains that important business metrics are often specific to certain industries. Concepts and vocabulary useful to guiding business process improvement in one industry – sometimes called a "vertical" – are what is meant by "local knowledge."

3/ Why should a Business Data Analyst have SQL skills?

○ To retrieve data from different types of databases throughout the organization

○ To increase their efficiency and autonomy

○ To be able to combine data from multiple sources to create new data sets and answer new questions.

◉ All of the above.

Correct: The many advantages of possessing SQL database skills are explained in the Video *Distinguishing the Business Analyst and Business Data Analyst Roles* at 0:54–3:00.

4/ True or False: "NONE of the nine skills required of all Business Data Analysts are part of the skills used regularly by the typical software engineer."

○ False

◉ True

Correct: Of the nine skills, seven are also required of Business Analysts. These are explained throughout the *Business Analyst* video. The two additional skills required are explained in the video, *Distinguishing the Business Data Analyst and Business Analyst Roles* at 0:03-2:16. Skill sets for software engineers have surprisingly little overlap. The video *The Senior Software Engineer* makes this point at 0:31-0:48.

5/ True or False: Strategic consulting firms with a software/systems integration focus often introduce the latest methods for achieving competitive advantage into a particular vertical market, such as retail pharmacies, which forces other companies in that vertical to use the same methods to stay competitive.

⦿ True

○ False

Correct: The video *Strategic Business Consulting – Focus on Software/IT Systems Integration* argues just this point at 2:24-3:36.

6/ Hardware & software companies compete in a market that has a very ==unusual== cost structure. This is because:

○ These types of companies derive their value from developing and delivering proprietary intellectual property.

⦿ They incur almost all ==**their costs up front**==, before the first product is sold, while the incremental cost to create one more unit of the product is very low.

○ It has high variable costs and low fixed costs.

○ All of the above.

Correct: The video *Hardware and Software Companies* at 0:27-1:01 explains these companies' unusual price dynamics: "technology has high fixed costs to develop, and variable costs that are often close to zero. The first copy of a complex enterprise software application might cost $5 million to develop, but the second copy, and every additional copy, might cost a penny."

7/ Business Data Analyst ==Tiffany Yu== advises that in order to learn to write SQL queries well enough to be able to start gathering information for yourself, you will need to prepare (study) for about:

○ Six Weeks

○ One Month

⦿ One ==Week==

○ A University Semester Course

Correct: This topic is addressed in the video, *An Interview with Business Data Analyst Tiffany Yu*, at 2:50-4:00.

8/ Of the five business types represented among US companies, Traditional Strategic Business Consulting firms are the least likely to hire software engineers and technical project managers. Why?

⦿ Strategic Business Consulting generally ==does not include== developing or installing technology.

○ These firms focus on ways to improve business processes, such as increasing revenues and reducing risk.

○ Analysts represent the largest single job type in these types of firms

○ Strategic planning in the corporate world is critical to a firm's success

Correct: This Course distinguishes "Traditional" strategic business consulting companies – who analyze data but do not build IT systems for clients – from those business consulting companies with a specialized focus on "IT and system integration." The work of "traditional" consultants rarely if ever involves software development for clients, although it still involves data science tasks such as gathering data from diverse sources and integrating it for analysis.

9/ Which other type of Company represents the biggest threat to "bricks and mortar" Companies?

○ Traditional Strategic Business Consulting firms

○ Hardware and Software Companies

○ Business Consulting firms with an IT focus

◉ Digital Companies

Correct: The video *Digital Companies* and the 20-item checklist to accompany the *Bricks-and-Mortar* video should together make clear why *Digital Companies* are a mortal threat to many types of Brick-and-Mortar companies.

10/ What software tool is Data Scientist **Dai Li** referring to, when he says, "Of course I also use [it]. It sounds like [it] is more nontechnical, but actually it is a very good tool. You can do a lot of data processing, data analysis, and data modeling if you are using [it] with very good efficiency."

◉ Excel

○ Matlab

○ SQL

○ Python

Correct: These comments are in Dai's interview video at 1:05-2:13.

11/ The current world leader in market share for remote ("cloud-based") hosting of other companies' data and applications is:

○ Microsoft

◉ Amazon

○ IBM

○ Google

Correct: This market is discussed in the *Digital Companies* video at 2:08-2:33.

12/ For brick and mortar businesses to survive digital competition, the most important factor is:

◉ Does the company deliver its product or service as quickly as its online competitors?

○ Production efficiency

○ Pricing

○ Brand Awareness and customer loyalty

Correct: The 20-item checklist to accompany the *Bricks-and-Mortar* video specifically includes the need for traditional services companies to match the speed of delivery of their online (digital) competitors – Item 11 at 4:21 to 6:38. Efficiency, brand awareness, and nearby locations are all desirable, but speed trumps everything else, given that customers are now used to obtaining even complex services, like mortgage financing, online.

13/ The term "Point-of-sale customization" means:

○ Every online customer is unique and therefore can and should be shown different prices and products

○ It is possible to attract new customers by using more customized incentives

○ Bricks-and-mortar companies are at a disadvantage because they can't track history as well as online companies

◉ Targeting individual customers with coupons or other special offers when they visit a store, based on their past purchase history

Correct: Point-of-sale customization is item 14 on the 20-item checklist. It is discussed in the video *Bricks-and-Mortar Companies* at 4:21-6:38.

14/ One survival strategy which will definitely NOT succeed for Barnes & Noble in its struggle with Amazon is:

○ Converting Barnes and Noble into more of an exclusive literary club for paying members

○ Selling coffee, food, and non-book gift items

◉ Putting more resources into their web presence and online sales

○ Offering lectures, classes, and other social events related to books in its stores

Correct: *The Barnes & Noble case Study video at 2:31-3:55 explains that the company's primary differentiators are all related to the intangible benefits of being with other people who like or love books. These differentiators are sustainable against Amazon; on the web Barnes & Noble has no competitive advantage.*

15/ What is the primary difference in business model between the two Digital Companies Uber and Airbnb?

○ Uber is highly profitable; Airbnb is not.

○ Uber transportation is only available in certain cities; Airbnb properties can be anywhere in the world

○ Uber transportation is much less expensive than regular taxi service; Airbnb room prices are similar to traditional hotel rooms

◉ Uber sets prices for drivers; Airbnb lets property owners set prices themselves.

Correct: The similarities and differences in business models for Uber and Airbnb are discussed in the *Digital Companies* video at 4:19-5:25.