Venture Capital and the Finance of Innovation
Project Part 2: Total Valuation
Due Monday, Nov. 3 at 11:59pm
Professor Luke Taylor

This part of the project is worth 15% of your course grade.

Your job is to estimate how much your chosen company is worth today. You will be graded based mainly on how well you support your assumptions and analysis with sound data, convincing logic, and a deep understanding of the company and its market. Your valuation will be an important input to part 3 of the project.

We will evaluate your valuation model using six criteria:

1. Revenue model: How large will revenues be in five years? How large is the addressable market, and how fast with the company acquire market share? What data did you collect to bound your assessments? Your revenue model should use non-financial indicators to build aggregate forecasts. For a good example, see Exhibit 34.4 in *Valuation*, by Koller, Goedhart, and Wessels, and also see the Twitter valuation example described below.
2. Cost/margin analysis and evolution: How profitable will the company be? What are the most relevant drivers of this profitability (both financial and non-financial)? What data did you use to bound profit margins? How will margins change over time, and why?
3. Multiples/Comparables assessment: Which comparable(s) is/are the most appropriate for evaluating your company? How can you use information from comparables to help value your company? Here you have two options. First, you can use the hybrid DCF model we covered during lecture. In that model we used comparables to get a year-five terminal value. Alternatively, you can build a pure DCF model and triangulate the result with a valuation based purely on comparables.
4. Capital requirements and ROIC: How much capital does the company need to grow? What returns do you expect from invested capital?
5. Cost of capital: You should come up with a defendable cost of capital for the company. The cost of capital should be based on the CAPM or a multi-factor model like the Fama-French model. If the firm has debt, make sure you adjust the WACC. See section 12.3 in the textbook if you're stuck.
6. Structure, clarity, and simplicity: Could I show your analysis to a seasoned VC? Would they see thoughtful insights or an overly-ambitious, disorganized model? Remember, style counts. If your spreadsheets and documents are confusing and/or poorly formatted, this defeats the purpose of a concise, clear model. You need to defend your assumptions either by commenting the Excel file heavily, or by attaching an appendix to your Executive Summary.
7. Include sensitivity tables that show how sensitive your valuation is to some of your most important assumptions.

We will <u>not</u> evaluate you based on how close your valuation is to "actual" valuations from recent financing rounds or (if your company goes public before the due date) from post-IPO stock prices. We want you to reach your own opinion about how valuable the company is. For those of you evaluating S-1 companies, keep in mind that we are aware of the vastly greater amount of information and third-party analysis, so you must make sure to have unique insights.

You are not required to use the exact hybrid DCF model we covered in lecture, although you're welcome to use it if you want. I've uploaded the Excel valuation model for Atricure to Canvas in case you want to use it.

Deliverables

You should plan on turning in a PDF file that starts with a 1-page executive summary of your main results (both total valuation and price per fully-diluted share) and main assumptions. That executive summary should be followed by labeled sections that explain and defend your analysis for the first 5 criteria above. These first pages should not exceed 6 pages in length, double-spaced. Feel free to copy excerpts of your Excel model into these pages. You should also include a works-cited page at the end of this document that clearly cites all sources used in your research. Feel free to include an appendix containing material you believe important to the valuation, but not necessary to put in the main text.

Additionally, you should turn in a clearly labeled Excel file (which can have excerpts in the PDF file), that can be navigated and checked over easily. If it is too difficult to read or use, points will be taken off. Make sure the tabs are properly labeled, and that assumptions and data sources are clearly referenced.

You should create this project assuming that you are sending it to a VC partner in defense of your valuation of the company. In the next phase of the project (part three), you will use this valuation to come up deal terms for a proposed investment. In other words, getting the valuation right will directly affect your results later in the semester.

How to turn in the assignment

You'll turn in your Excel and pdf files electronically using Canvas. Here are instructions on how to do it: http://guides.instructure.com/s/2204/m/4212/l/54353-how-do-i-upload-a-file-to-my-assignment-submission.

What a good final product looks like

To give you a sense of what I'm looking for, I've uploaded to Canvas what a good final product looked like for a slightly different project I gave last year on Twitter. Students were asked to estimate a price per share for Twitter before its IPO. Compared to last year's students, you are expected to do more work on forecasting and margin analysis, since there will be much less research and third-party suggestions for your company than for a pre-IPO company like Twitter (unless, of course, you're analyzing a pre-IPO company). Additionally, I told students last year what cost of capital to use; this year I'm asking you to find it yourself. There are a few other differences between this year's assignments and last year's, so be sure to follow the instructions in this document carefully. There are two examples on Canvas with both the PDF and Excel uploaded.

Academic integrity

I highly encourage you to talk to other teams as long as they're not evaluating the same company. Get each other's opinions on your market sizing model, edit each other's executive summaries, and so on. Talking to teams evaluating the same company, however, is considered cheating. You're also cheating if you copying someone else's valuation model, for example, off the Internet. Additionally, remember that you must cite all sources including analyst valuation models or reports.

Resources:

- Stuck? Not sure where to start? First consult the materials we covered in lecture. Then come talk to me or the TAs. We're here to help.
- The librarians at Lippincott are a great resource for you. I highly encourage you to enlist their help in finding the information you need. For example, need to figure out how many reservation-taking

restaurants there are in the U.S.? The librarians are great at finding that type of information. Think of the librarians as your research department.

- Bloomberg is a great source of information on comparable companies.
- For software companies, we have posted a great deal of valuation tools on Canvas under “optional reading” including some articles on margin comps, terminal values, and even an excel template for SaaS financial statements.