Table of Contents

[Prologue 2](#_Toc205327129)

[**Business of Science** 3](#_Toc205327130)

[Management Consultant 4](#_Toc205327131)

[Business Development Manager (BD Manager) 6](#_Toc205327132)

[Investors (Venture Capital Investment for example) 7](#_Toc205327133)

[**Research in Industry** 9](#_Toc205327134)

[**Self-Evaluation – Scientific Business** 11](#_Toc205327135)

# *Prologue*

*“Companies are no longer willing to hire Ph.D.’s who don’t bring additional skill sets to the table; they tend to hire candidates who they think will add value [to the company] in addition to research skills.”*

## **Business of Science**

(In summary, scientific business work is an intersection of research and business for whom want to pursue a business-oriented role while staying in close to new scientific breakthroughs. The work task includes solving complex & unpredictable problems, frequent communication, strategy making/executing. The working environment is intelligently stimulated, heavy on collaboration and hustle. But this type of work is typically profitable. In US, these business companies are typically located in urban areas like NYC, Boston, Chicago, Seattle, San Francisco, but large firms also have offices over globe. This overall industry could be greatly affected by economy)

### Management Consultant

1. **Hiring market**.   
   Large firms are known for their consultation hiring in most industries they serve health care, retail, pharmaceutical, or energy, while boutique firms specialize in a particular industry or a smaller subset.
2. **Career pathway**  
   It’s common for Entry-level PhDs initially hired by large firms as they could offer more sufficient training resource but move to smaller bontique firms after a few years. Another option would be working as a member of large firms’ internal consulting teams, corporate strategic planning division or the business-development group.
3. **Work style**
   1. Travel Frequency  
      Travel is typically required as it’s depended on project and assignment. On-site consultants are required to visit their clients, while the off-site consultants can work remotely, and only occasionally visit their clients.
   2. Hours and intensity  
      It’s said by one source that 60+ hours/week are the norm. But it’s suggested as fine for most grad students as they work late and on weekend, but the deadline/feedback would make it more stressful than most grad lab. Noticeably, consultants can experience highs and lows in the amount of workload depends on project.
4. **How could be qualified for it?**
   1. Basic desired skills:
      * Specific domain knowledge
      * Quantitative analysis
      * Teamwork experience (personal impact)
      * Communication skill (written and oral)
      * Leadership
      * ~~Business knowledge~~. It is not required but prefered as it could be quickly gained after the entry-level training in firms.
   2. What make a good consultant:
      * Able to ask good questions
      * Able to find and collect data
      * Able to synthesize unstructured info into insightful results
   3. Survive the Case Interview: regular interview + case-study method  
      Case study is a qualification method which can show how well candidates think when there is ambiguity, what consultants do every day. This is not covered much in PhD unless an MBA, but there are many resources to learn.
5. **Suggestion for preparing for consultation career during PhD**
   1. Show your organizing ability & leadership:   
      Talk about how you organized academic conference or lecture series if applicable: how you initialize, promote and pull it together. Make sure to emphasize their result.
   2. Hightlight your dissertation  
      This shows your ability in working a long-term project step by step.
   3. Highlight your written and verbal communication skills:   
      Experience in speaking to academic audiences is particularly valuable.
   4. Highlight teamwork experiences:  
      Any acheivements that demonstrated sucess, drive and the experience of being part of a team.
   5. Teaching:  
      It shows the ability to present complex matters to a variety of audiences.
6. **Resource**
   1. **Finding Consulting Companies**

* [LinkedIn Group –PhD to Consulting](https://www.linkedin.com/groups/PhD-Consulting-3797868)
* [Vault rankings of consulting firms](http://www.vault.com/company-rankings/consulting/)
* [Inside Consulting](http://www.insideconsulting.com/ResourceCenter.htm)
* [List of top management & IT consulting firms](http://www.consultingcase101.com/list-of-top-consulting-firms-in-north-america/)
* [*Consulting* magazine](http://www.consultingmag.com/)
  1. **Association**
     + [Women Entrepreneurs in Science and Technology (WEST)](https://www.westorg.org/)
     + [Biotechnology Innovation Organization (Bio)](https://www.bio.org/)
  2. **Case Interview Preparation**
* [*Case in Point: Complete Case Interview Preparation*](http://www.amazon.com/Case-Point-Complete-Interview-Preparation/dp/0971015864) – a book by Marc Cosentino
* [*Vault Guide to The Case Interview*](http://www.vault.com/product.aspx?isbn=9781581315301) – a book by Mark Asher and Eric Chung
* [*Case Interview Secrets*](http://www.caseinterview.com/) – book and website by Victor Cheng
* [Inside Consulting](http://www.insideconsulting.com/Case%20Interviews.htm) – from the authors of [*Management Consulting: A Complete Guide to the Industry.*](http://www.insideconsulting.com/Book1profile.htm)
* [Interview prep advice on the BCG website](http://www.bcg.com/join_bcg/practice_cases/default.aspx)
* [Interview prep advice on the McKinsey & Company website](http://www.mckinsey.com/careers/join_us/interview_prep)

### Business Development Manager (BD Manager)

1. **Hiring Market**
   1. Big Companies  
      They offer more specialized BD jobs, which includes looking for new product, new markets for the tech and strategic partnership. This means BD is for ensuring a sales and revenue increase. This includes dealing with product pipelines, deciding on what product to launch next and when is the right time, exploring new markets, among others.
   2. Small companies/private sectors  
      BD position is varied and might be involved in sales and marketing, which is suggested to give a mix of experience.
   3. Universities  
      There are also BD types within tech-transfer task aimed to commercialize the invention, liaise the industry partnership
2. **Career Pathway**  
   You have many career options when you’re in this BD role for few years. You can get promoted as an executive role like CCO or CSO. Meanwhile, there are other options in business like investor, entrepreneur, consultant could be a good fit.
3. **Work Style**  
   It fits the business work’s stereotype, which is addressed in “consultant section”.
4. **Qualification**
   1. Technical background and scientific knowledge are essential
   2. Communication, collaboration (maybe negotiation)
   3. Critical & strategic thinking: manage timelines, budgets and decisions.
   4. Network  
      BD isn’t a target that you can easily transition to directly and it’s better to go in other business work first or have connection
   5. Research and data analysis
   6. ~~Previous industry experience or MBA.~~   
      They’re not required but preferred. It’s suggested to find a new company employing these technical traits you bring with PhD, and they most likely have a tuition for your MBA.

Investors (Venture Capital Investment for example)  
(VC is a form of private equity financing for early-stage

1. **Hiring Market (Investment)**
   1. Early-stage investment (VC)  
      This investment usually looks for new companies offering new service & tech, so it hires people with specific expertise. PhDs will likely be more in demand as they’re able to analyze the new tech and the market demand.
   2. Late-stage investment (usually called Private Equity)  
      It invests in established undervalued companies with some exist service. These firms are more focused on business problems, so they demand financial expertise than an expertise.
2. **Career Pathway**  
   VC firms’ websites usually list positions for their portfolio companies rather than itself. To get into that VC firm itself, you can network with alumni, or someone involved with a venture-backed startup. Also, most firms expect previous experience like if you’re former entrepreneur or worked other “big picture” role like business development or management consulting. If not that luck, check the openings at firm’s portfolio companies to familiarize with the startup environment first. Your entry-level work will ask most of your time for sourcing deals and analyzing potential investment opportunities rather than directly writing any checks (take credits for savvy investment decisions). However, the entry-point is varied due to the difference in the internal structure of firms. A quick look at the firm’s website will reveal the structure: firms are hiring fresh MBAs they also be amenable to hiring PhDs.
3. **Work Style**  
   Work hour and intensity are the same. But VC firms’ work hours are less demanding than in investment banking and it’s varied depends on investment deals. It will be very dynamic and have a faster pace than other business work. A strong network and mentorship are much more beneficial in this industry than others
4. **Qualification**
   1. Creativity, innovation and discovery
   2. Transform initial research data to possible impact and societal value
   3. Technical background and scientific knowledge  
      Useful to evaluate the potential rise and fall of new tech ventures.
   4. Financial acumen  
      understanding investment strategies, ROI and valuation models for risk and opportunities.
   5. A grasp of business concepts  
      market analysis, competitive landscape and regulatory pathway.
   6. Strong communication skills  
      explain scientific concepts to investors, stakeholders, network with partnership
5. **Resource**
   1. [Resource for early-stage guide in VC career](https://bioxlist.com/blogs/news/biotech-vc-career-guide-from-science-to-investment)
   2. Two other comprehensive lists of venture capital firms can be found [here](http://www.venturechoice.com/vcdir.htm) and [here](http://www.boogar.com/resources/venturecapital/index.htm)

## **Research in Industry**

(Here, I only address the difference the difference between industry researcher and the academic one as lots of us are so clear about what researcher do and how to be qualified for……)

1. **What’s the difference?**
   1. Financial  
      Industry usually offers better salary, but the gap is not so wide. However, the industry gives you bonuses as a part of conspection
   2. Working-pace  
      The industry enviroment is fast-paced and intellectually stimulating, but it could cause stress ofc. The pace of academia is still stately compared to industry, and the former is more structured and scheduled. An industry project typically lasts 1 year while an academic one would typically last 3 to 5 years.
   3. Purity of research  
      This point also explains the timeline difference above as researchers in academia disperse their time on grant writing, research, teaching, while the researchers in industry are more focus on “pure research” and problem solving.
   4. Publication  
      Industry scientists also publish their work for intellectual property protection encouraged by their companies while other might not. It’s mentioned that some of the best scientists in industry make keep their work confidential.
   5. Team/probject stability  
      Industry is a more volatile enviroment than academia in terms of stability: your team might be reassigned for new project, or your project might be announced terminated suddenly; company would act swiftly if your project is not productive. That’s reorganization is common.
   6. Skillset-oriented  
      In academic, your drivers would be result, publishing, networking and building networking; while the industry put more of your reputation with on your organizational aptitude, people skill, ability to strategize and execute plan.
   7. For curiosity or goal?  
      Industry favors a goal-targeted personality but with a bit of flexibility since you won’t be able to investigate every promising lead or change your direction at will. If you think you want to be related to management role, industry is built for you while the management training is hit-or-miss in acadmia.
2. **Hiring Market**
   1. Small vs Large company  
      Large companies have more resource/funding and better job security and hire people from diverse background; while the small ones hire very specific skill sets but whose employees often are required do the task they’re not expert in.
   2. Your PhD or postdoc degree might be important  
      Companies will strongly consider your postdoc (or lack thereof) in determining your start point and salary.
3. **How to make the transition to industry ?**
   1. A postdoc in industry would help the transition and it will be strongly consider for your entry-point and salary.
   2. Internships are not a requirement but are strongly recommended if you consider a career in industry as it gives your trail and boost your skills.
   3. Tech research in industry is often interdisciplinary so the flexiblity in skill and knowledge is valued.

## **Self-Evaluation – Scientific Business**

1. **What I like in work**
   1. Intelligence stimulation
   2. Fast-paced and hustle
   3. Be close to market and tech commercialization
   4. Make strategy, organize and execute
   5. Collboration - competition balance
2. **What I don’t like and need to check the managability**
   1. Heavy on communiation for a non-native speaker
   2. Too much collaboration would be overwhelimg for me sometimes
3. **Not sure**
   1. TravelToo much travel would be overwhelming but it would be exciting for me at most case if not too frequent