**Business Case Development for Data Science**

**Introduction**

As data science becomes more common in industry, many recognize its potential to improve how we do business and its potential to disrupt business models all together. Across HCA, we are looking to use data science to improve decision-making, workflows, and diagnosis. There is so much potential that we need a way to think through the opportunities, communicate ideas, and decide which ones we should pursue. In this three part blog series, I am going to introduce several frameworks we have developed in the CSG Data Science team to help with the business side of our projects and products:

1. Making the Case - Business Case Framework
2. Measuring Success - Key Performance Indicator Framework
3. Calculating Value - Financial Analysis Framework

Most of these concepts are not new, but applying these to data science products is a challenge. Our goal in creating these frameworks was to develop a structured, systematic, and repeatable way of thinking through our ideas. Additionally, these frameworks consider not only our team’s perspective, but the perspective of all stakeholders. Using this approach helps us better define our products, improves communication for understanding, increases the efficiency of development, and reduces the risk that a project will be derailed. As with any set of frameworks, we know these are not perfect for every application, but they are useful for getting valuable products into the hands of our customers to better serve our patients.

**Part 1: Making the Case**

**The Business Case Framework**

A business case is a justification for a proposed project or undertaking on the basis of its benefit. It is used to clearly frame up a solution to a problem or new initiative that has some type value to the targeted stakeholders. Stakeholders can include customers, partners, influencers, decision-makers, leaders, investors, and so on. Sometimes a single stakeholder can take on multiple roles.

In framing up your business case, understanding the decision-makers is particular important. In fact, business cases are often specifically designed with decision-makers as the target audience. If they are not convinced your project is worth dedicating resources to, your proposal likely will not make it far.

The framework itself is fairly simple and asks eight questions that need be answered clearly. These are questions that help everyone understand what you want to do, why you want to do it, and what your high level plan is. While the questions are simple, sometimes getting to the answer is complex, and getting stakeholders to agree on the answers is a key challenge.

**Four Key Questions to Answer**

There are four questions that without a doubt should be answered before you can move forward. These are the foundation of your project or product anyway. Once answered, they are also the content source for your elevator pitch.

* **What is the problem (or new initiative)?**  
    
  This should be as clearly defined as possible. A problem statement might start as a well thought out hypothesis until you have some initial analytics complete. As you work through this question, you might find that what you thought is the problem is simply the symptom of a root cause. You may also continue to refine this answer early in the project. Either way, your answer will also set the stage for the scope of work that needs to be done.
* **How big is the problem (or opportunity)?**  
    
  Traditional analytics are your best friend with this question. Using hard facts and information from trusted sources, you need to build a convincing picture of the depth and nature of the problem you are trying to solve. If you make any assumptions, be sure to clearly spell out what those are. You should be able to explain and defend your analysis. In the early stages, your analysis should be good enough to answer the question. Be careful to avoid analysis paralysis and the temptation to bias the analysis to give you the answer you want.  
    
  TIP: Speak to facts that you think your decision-makers will find interesting and are relevant to the problem.
* **Why should we solve the problem today?**  
    
  Okay, you have a problem. So what? The company has a lot of problems and initiatives and a limited number of people and resources to work on those. Decision-makers need to understand why you think this problem is a priority to solve and how it will benefit the company. While you may really want this project to go through, it’s up to the decision-makers to decide what should be pursued and how best to allocated resources. Give them what they need to make a good decision.   
    
  TIP: Identify how your project aligns with corporate, business, and stakeholder strategies.  
  TIP: This is a great place to share the project’s customer value proposition.
* **How are we going to solve the problem?**  
    
  Here’s the fun part. Your answer should be a high level description of your vision of how you propose to solve the problem. It should touch on the people and processes that your solution will likely impact. There may be other ideas on how to solve the problem, so be ready to recognize those and explain why your way could be better, but also be ready to take feedback that you can incorporate into your solution.  
    
  TIP: Stay away from details that don’t need answers yet. You could unnecessarily put yourself on a path that you later regret.  
  TIP: Involving stakeholders with developing the solution results in better ideas, buy-in, and early supporters of your project.

**Four More Important Questions to Answer**

In addition to the four questions above, these four questions are also important to answer as you develop your project. These will eventually be asked of you about your project, and you’ll need to know the answers early on.

* **Who will benefit from solving the problem?**  
  This is another “so what” question and an extension of why we should solve the problem today. Here you want to be more clear on who the beneficiaries are of your project. In general, stakeholders want to know how it is going to help them, and decision-makers want to know who your project is going to help.  
    
  TIP: Include beneficiaries that stakeholders care about. For example, in healthcare those could be patients, nurses, or doctors.
* **What resources do we need?**  
    
  You’re making a business case for a reason. You need help, resources, and approval. Here’s where you make the ask. Stakeholders want to know what it is going to take to make this solution happen. Hoping for a blank check is a quick way to lose credibility for a project. There are three resources you consider:  
  + Who do you need? (Orgs, Teams, SMEs, etc.)
  + What do you need? (Money, Equipment, etc.)
  + When do you need it? (Staging of resources is just as important.)
* **What is the proposed timeline?**  
    
  People shy away from committing to timelines. But, time is money, and if you don’t have some idea of how long your project is going to take, your project loses buy-in. Time is one of the most valuable resources in a company and decision-makers want to know your projections. Stick to high level project phases and use a quarterly timeline at least. Monthly is great if your problem is beholden to external factors not under your control. Better to steer away from exact dates since people likely will not believe them and it will generate a debate detracting from your case.
* **What are the risks?**  
    
  Projects are inherently risky, but there is no reward without risk. Stakeholders want to know that you recognize these risks and what you are doing to minimize or mitigate them. It’s a tricky dance to tell stakeholders about the risks they face without undermining your own effort to get the project approved. Here are several tips:  
  + Be honest. Executives like to know you thought about what could go wrong. They do not want to be caught off guard by something you knew and did not tell them.
  + Be concise. Dwelling on specific or unknown risks can make the perception of those risks bigger than the reality.
  + Be aware. Stay away from unnecessary land mines that could distract from your goal or prematurely end the project.

**Conclusion**

The point of this framework is to get everyone on the same page and on board with a project idea. Even with great ideas, being unable to clearly answer these questions is an indicator of a project at a high risk of derailment or failure. Of course, even great business cases don’t always get projects approved. If you made an excellent case and it didn’t get approved, it doesn’t necessarily mean you failed. Decision-makers have to make calls based on business constraints and priorities. Your role is to help them make a good decision.

Now, you may have noticed, nowhere in this framework is the term data science mentioned. It’s intentional. Data science is a solution to a larger business problem that would be valuable to solve. I’ll elaborate more on this in my next blog on developing KPI’s for measuring the success of data science projects and products.

If you have questions about this framework or would like to know more, please feel free to contact me at matthew.brown@hcahealthcare.com

Want to Learn More about Business Cases? Here are a few resources:

HBR Guide to Building Your Business Case by Raymond Sheen

HealthStream – Havard ManageMentor – Business Case Development