Problem Scoping

Scoping a problem means understanding the business context and precisely defining the problem to be solved. This is crucial for planning work and setting expectation about the deliverables.

Despite our simple definition, scoping a problem is a non-trivial and highly ambiguous process. It's also important to pay attention to the word "process" because scoping is never a one-time exercise.

Next, we share some practical tips on how to define the scope of a problem. Just remember that, like any other skill, this also will require practice. But no worries because we got you covered!

Listening

Since the ultimate goal here is to understand the problem and its context to the best we can, you might think that you should start by asking questions. But, no! First, we must listen!

Video: *There is truly inspiring TEDx Talk by William Ury, in which he points out three big reasons (all very relevant to what we do) as to why we should listen: - Understand - Connect - Get to Yes*

It's a 15-minutes video that we recommend you watching, and perhaps write down some notes here for your own future reference: The power of listening

Asking questions

The single most important resource we need when it comes to problem scoping is **curiosity**. By curiosity, we mean asking questions, lots of questions. Preferably open questions (questions that use keywords such as "what" and "how" instead of questions that lead to just a "yes" or "no" answer, for example).

Often, simple and obvious questions can be more insightful than we might expect. And it's totally fine if we are not familiar with the problem domain, this can actually be a good thing because an outsider is more likely to bring new a perspective to the problem.

As analytics professionals, we don't need to be healthcare experts to solve a nurse scheduling problem, for example. But we need to be genuinely interested in learning about the problem and its business context. This is how we deliver the most impactful results.

What questions to ask

For most people, this idea of asking questions may sound intimidating because they might think that they will not know what questions to ask. But if you are truly curious about the problem, and if you shift your attention to your client (rather than to your self) as suggested by Ury in his talk, then the questions will certainly come up.

Also, keep in mind that you don't have to wait until you get in front of the client to come up with all your questions. In fact, the client will appreciate if you arrive with a list of question in hand, because that means that you have prepared for the discussion.

Goals and requirements

We need to identify what's to be achieved, the goals, and under which conditions, the requirements.

Although client usually have a lot of clarity of what they want to achieve, you might be surprise to see that, very often, the problem they describe is not the problem that needs to be solved. It's like going to a doctor's appointment, you are only aware of the symptoms, and it's the doctor's job to identify the underlying problem and how to address it.

Reading: *Here is an interesting article (4 min read) on this topic that Peter Bregman, the CEO of Bregman Partners, wrote to the Harvard Business Review:*
Are You Trying to Solve the Wrong Problem?

Identifying the goals is usually easier than identifying the requirements. Typically, there are requirements that only pop up after the client start to see the solution. On the same analogy of seeing a doctor, it's like when you start to take a new medicine and experience some side effects. Then you go back to your doctor and she tries to address it.

Subjective things

Pay especial attention to subjective things. For example, the client might give a lot of detail about how they want to improve production in their main facility to meet their increasing demand. But you might capture from the conversation that one of their main concerns is also the stressful working condition that planner are facing.

Taking notes

Make sure to take notes, either during the meeting or right after that, and try to capture as much detail as you can. Keep in mind that you will have to rehearse the problem statement to other people in the future, including to the clients themselves in subsequent meeting to show that you understand their problem.

Remember that even information that might not seem relevant for the present moment, might turn out to be useful in the future or for subsequent projects.

Sharing findings with the client

After the scoping discussions, it's important to play back our understanding of the problems to the client. This is to ensure that everybody is on the same page.

It's up to you to decide on the best method to share your understanding of the problem. It can be slides, spreadsheet, or just a text document, for example. Also, consider illustrating the problem with a small example and depicting it with flow charts. Visuals tend to lead to more fruitful discussions.

Final thoughts

We hope it's clear now why problem scoping is a process, rather than a one-time exercise. We hope you understand now our bias to follow the Agile framework: Since we can't have a precise picture of the whole problem upfront, we need to start small (with an MVP) and keep iterating and expanding as we collect feedback along the way.

This is in contrast to the thought process we are exposed to when learning how to solve problems at school. There, we are given a very well-defined problem, and if we happen to find any ambiguity in the statement, we immediately go back to the instructor and demand clarification. In addition, you are expected to solve the problem in a certain way, which is using the approach you have just been taught. However, solving problems in the real world is more of an art than a recipe.

Next, we will give you some tips on dealing with clients.