<<Excerpt from Analyze It! Story>>

Chapter 2 — Let's get down to business (and what's wrong with it).

As we learned in the previous chapter, the School Spirit Club has identified a major discrepancy: there is a large gap between what they expected the school store to have raised by this point in the year and what it actually has raised. A big question we have to ask is: Why is the school store failing to meet its goal?

Narrator: Marla continues to worry as chatter from the other students fills the room. Not being able to go on the trip after imagining it ever since she walked through the doors of the school on the first day of 6th grade? She has always imagined that day being such a memorable event, one where she and Peter would ride roller coasters again and again until one of them would either puke or faint.

Peter: "Well, how can we solve this? I've been looking forward to going on this trip for three years now, and I'd really like to try make it a reality if possible!"

Narrator: Other students chirp in with a, "Me too!" and "Same!" The consensus in the room is the same — the School Spirit Club's number one goal is to figure out how to fix this.

Mrs. Evans: "Well, I think the first thing we need to figure out is the **root cause** of why the school store isn't bringing in enough **revenue**."

Marla: "What do you mean by "**root cause,**" Mrs. Evans?"

Mrs. Evans: "That's a great question, Marla. **Root cause** essentially means we need to understand what the real problem is behind all the current symptoms. For example, I had a student this morning who was late to homeroom. Why do you think that student may have been late?"

Narrator: The students in the Club start thinking about why the student could have been late. No one answers since there are a lot of reasons to be late, and they aren't sure what the correct answer is.

Mrs. Evans: "I'll start us off here — the student was late because they missed their bus. Why do you think they missed their bus?"

Marla: "Was it because they overslept?"

Mrs. Evans: "Yes, exactly. Now let's think, why did the student oversleep?"

Peter: "Oh! They could have overslept because they missed their alarm."

Mrs. Evans: "You're correct! Now, why do you think they missed hearing their alarm?"

Narrator: This question gives the students pause. *Why would a student miss their alarm?*

Marla: "Well, there could be many reasons. They could have not heard it, or forgot to set it, or the alarm stopped working."

Mrs. Evans: "Great callouts. This is something you would obviously have to ask the student. In this particular scenario, it was because they use their phone as an alarm and forgot to charge it overnight, causing them to not wake up on time. So now let's think back here — the original problem is that they were late to class. Everything we listed before understanding that their phone wasn't charged are what we would identify as symptoms of the problem. However, the fact that the phone wasn't charged is the **root cause** of the issue. Does that make sense?"

Narrator: The students start to agree. That does make sense!

Peter: "Yes, it totally does. So, are you suggesting that we can apply this way of thinking to figure out why the school store isn't performing well?"

Mrs. Evans: "Yes, exactly. We call this type of questioning the "**Five Whys.**" Why? Because typically if you ask "why" five times after a response, that will allow you to get deep enough to understand what the real reason or issue is for a problem."

Marla: "Ah, that makes complete sense! So, who would be the best person for us to start asking these questions to?"

Mrs. Evans: "Well, who do you think would be a good person to start with, Marla?"

Marla: "Hmm...well, I'd say probably Mr. Martinez would be the best person to work with because he oversees the school store.

Mrs. Evans: "I agree! Why don't I go see if he's available for us to **interview** for a few minutes?"

Narrator: Mrs. Evans quickly leaves the room and the students start talking amongst themselves while waiting for her return. A few minutes pass and eventually Mrs. Evans comes back with Mr. Martinez shortly behind.

<<Excerpt from Analyst It! Companion Guide>>

Lesson #2 — Core Analysis Concepts, Part 1

Reading sections: Chapter 2 — Let's get down to business (and what's wrong with it).; Chapter 3 — Problem has been analyzed! Now what about a solution…?

Abstract of Chapter 2:

The School Spirit Club identifies the potential root cause of the identified problem in Chapter 1. They interview Mr. Martinez, the owner of the school store, and form a hypothesis that the store has been losing sale opportunities because it is a cash-only operation. They build a survey to ask several students to validate.

Abstract of Chapter 3:

Members of the School Spirit Club survey their friends and validate that their hypothesis is correct. Now knowing the actual problem statement, they brainstorm and come up with several ideas on how to solve the problem. They eventually land on building a mobile app with the Technology Club that will allow students to buy products using an electronic payment method.

Key questions to consider:

- What is a problem statement?
- What are different ways we can identify a problem? (Examples: surveys, interviews, root cause analysis)
- What are the differences between a customer, a user, and a stakeholder?
- What is a persona?
- What is brainstorming?
- What is a prototype?
- What is design thinking?

Supplementary Text

Problem statement —

A problem statement is a brief statement that defines a challenge faced by a business. It is typically seen as a starting point for coming up with a solution, such as a product or technology vision.

Defining a problem statement will allow you/your team to gather ideas to establish features/functions to solve the identified problem.

Think of the following questions when forming a problem statement:

- *What is the actual problem affecting your business?*
- *Who is affected by this problem?*
- *What kind of impact exists because of this problem?*

Problem analysis —

Problem analysis is the act of investigating the cause of an identified problem. In software analysis and development, problem analysis is a critical step in identifying improvements to existing technology, or deciding to build new technology. It is a critical function within the role of an analyst.

There are many different techniques an analyst can use to evaluate a problem, including:

- Interviewing a person (one-on-one or through surveys)
- Conducting a root cause analysis
  - Note: The primary text identifies the Five Whys as an example of how to perform a root cause analysis.

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