**Ask Question to Make Data-Driven Decisions**

**Structured Thinking:**

“Structured thinking is the process of recognizing the current problem or situation, organizing available information, revealing gaps and opportunities, and identifying the options.”

**6 Basic Problem types of Data Analysts typically face:**

1. **Making Predictions**

* Using data to make an informed decision about how things may be in the future.

**Problem: How to determine the best advertising method for a target audience?**

* A company that wants to know the best advertising method to bring in new customers is an example of a problem requiring analysts to make predictions. Analysts with data on location, type of media, and number of new customers acquired as a result of past ads can't guarantee future results, but they can help predict the best placement of advertising to reach the target audience.

1. **Categorizing things**

* Assigning information to different groups or clusters based on common features.

**Problem: How to improve customer satisfaction levels?**

* Analysts might classify customer service calls based on certain keywords or scores. This could help identify top-performing customer service representatives or help correlate certain actions taken with higher customer satisfaction scores.

1. **Spotting something unusual**

* Identifying data that is different from the normal.
* A company that sells smart watches that help people monitor their health would be interested in designing their software to spot something unusual. Analysts who have analyzed aggregated health data can help product developers determine the right algorithms to spot and set off alarms when certain data doesn't trend normally.

1. **Identifying themes**

* Grouping categorized information into broader concepts.

**Problem: How to improve user experience**

* User experience (UX) designers might rely on analysts to analyze user interaction data. Similar to problems that require analysts to categorize things, usability improvement projects might require analysts to identify themes to help prioritize the right product features for improvement. Themes are most often used to help researchers explore certain aspects of data. In a user study, user beliefs, practices, and needs are examples of themes.
* By now you might be wondering if there is a difference between categorizing things and identifying themes. The best way to think about it is: categorizing things involves assigning items to categories; identifying themes takes those categories a step further by grouping them into broader themes.

1. **Discovering Connections**

* Finding similar challenges faced by different entities and combining data and insights to address them.

**Problem: How to reduce wait time**

* A third-party logistics company working with another company to get shipments delivered to customers on time is a problem requiring analysts to discover connections. By analyzing the wait times at shipping hubs, analysts can determine the appropriate schedule changes to increase the number of on-time deliveries.

1. **Finding Patterns**

* Using historical data to understand what happened in the past and is therefore likely to happen again.

**Problem: How to stop machine to breaking down**

* Minimizing downtime caused by machine failure is an example of a problem requiring analysts to find patterns in data. For example, by analyzing maintenance data, they might discover that most failures happen if regular maintenance is delayed by more than a 15-day window.

**SMART Questions:**

**S=Specific:**

* Is the question specific? Does it address the problem? Does it have context? Will it uncover a lot of the information you need?

**M=Measurable:**

* Will the question give you answers that you can measure?

**A=Action-oriented:**

* Will the answers provide information that helps you devise some type of plan?

**R=Relevant:**

* Is the question about the particular problem you are trying to solve?

**T=Time-bond:**

* Are the answers relevant to the specific time being studied?

Things to avoid when asking questions:

1. **Leading Questions:** Questions that only have a particular response.
   * **Example:** This product is too expensive, isn’t it?

This is a leading question because it suggests an answer as part of the question. A better question might be, “What is your opinion of this product?” There are tons of answers to that question.

1. **Close-ended Questions:** Questions that ask for one word or brief response only
   * **Example:** Were you satisfied with the customer trial?

This is a closed-ended question because it doesn’t encourage people to expand on their answer. It is really easy for them to give one-word responses that aren’t very informative. A better question might be, “What did you learn about customer experience from the trial.” This encourages people to provide more detail besides “It went well.”

1. **Vague Questions:** Questions that aren’t specific or don’t provide context
   * **Example:** Does the tool work for you?

This question is too vague because there is no context. Is it about comparing the new tool to the one it replaces? You just don’t know. A better inquiry might be, “When it comes to data entry, is the new tool faster, slower, or about the same as the old tool? If faster, how much time is saved? If slower, how much time is lost?” These questions give context (data entry) and help frame responses that are measurable (time).