

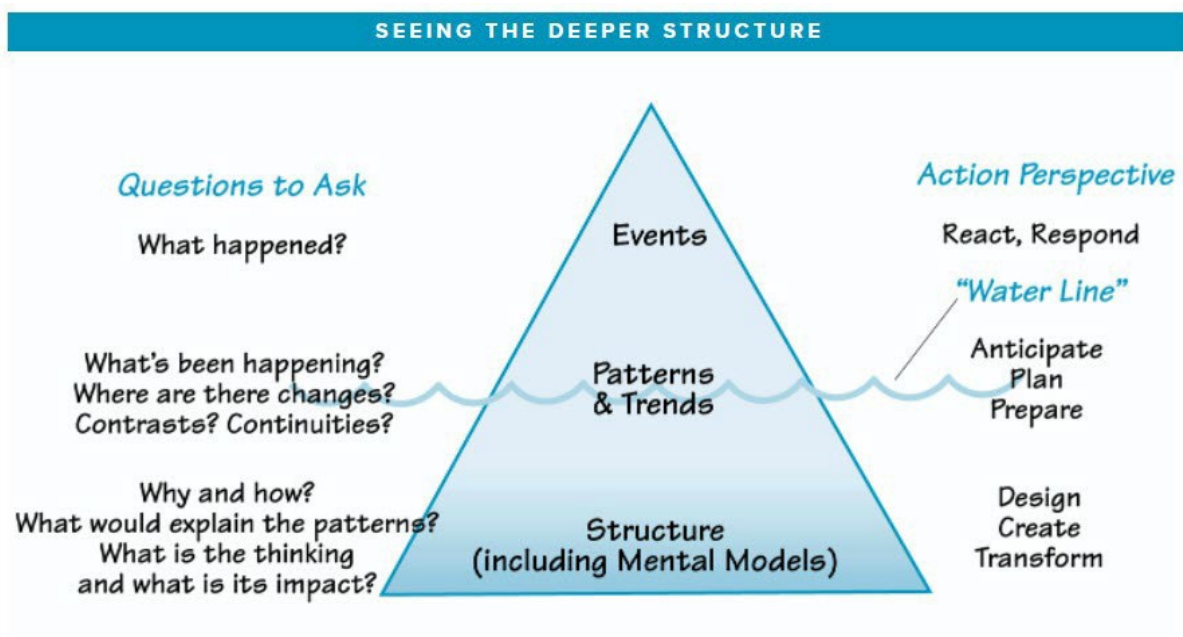
Introduction to Systems Thinking

WGU's Four-Step Tool (based on "[Six Steps to Thinking Systemically](#)" by Michael Goodman and Richard Karash)

STEP 1: Complete an Iceberg Tool for this case study.

The Iceberg Tool is a way to see how the structure (that is, the background of the case) ties together the individual events and the patterns and trends that emerge from recurring events. Using the Iceberg Tool allows you to see the basic facts and interconnections, an important first step.

Iceberg Tool to Understand Patterns and Structure

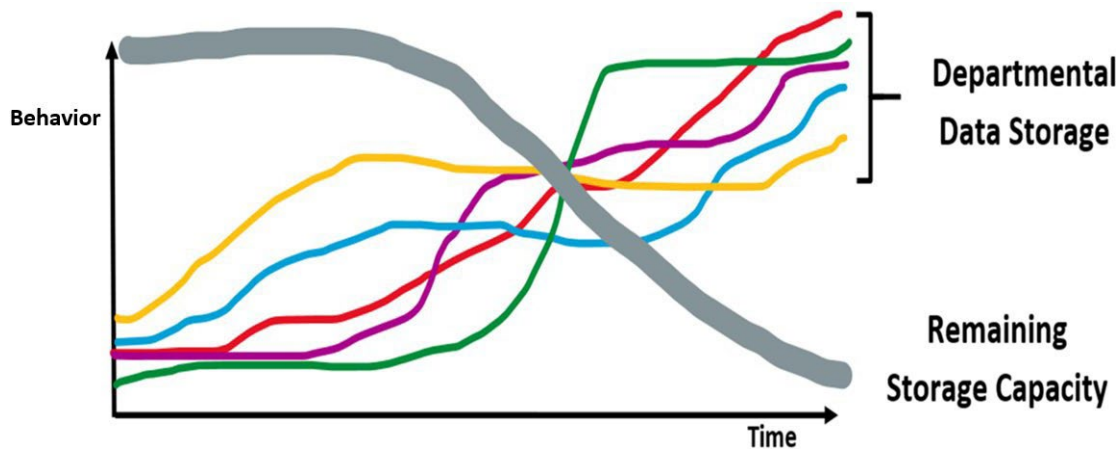


Questions to Ask

1. What are the key events in this case study?
Alia's startup company has grown enough to need offsite data storage. She engaged a data storage firm to provide this service and her team began uploading files. Unexpectedly, the contracted space filled rapidly and costs for over-use shot up.
2. What patterns do you notice in the key events of this case study?
A novice business owner makes impulsive choices, and her staff follow her instructions without question. Due considerations are not given to important decisions.
3. What structure(s) explain the patterns of events in this case study?
Structural elements in this case study are that a startup business under the direction of a novice business owner, a large amount of data that must be securely stored, and the service provided by the data storage firm.

STEP 2: Draw “Behavior Over Time” Diagrams. (Use as many blank BOT graphs as necessary, given the case study)

The BOT diagram helps you identify how human behavior plays out over a specific time period; here, the time is the period in which the case study occurred. It is best to group similar events or patterns together in a diagram; for example, you might create one BOT diagram showing the actions of different team members (all actions) and another for the investments made in marketing campaigns and the resulting return on those investments



STEP 3: Select the systems archetype that best fits the case study. You may wish to refer to [A Pocket Guide for Using the Archetypes](#).

The value of the eight systems archetypes is that they represent common problems within systems. If you can find an archetype that fits the system and the problem(s) you are confronting, you can use established ideas for dealing with the problem(s).

Examine each archetype carefully, comparing its causal loop diagram and text description with the given case study to see which one is the best fit.

1. Which archetype did you select?

This is a Tragedy of the Commons archetype.

2. Why does this archetype best fit the given case study? Explain how its causal loop diagram and text description match up with the facts of the case study.

The text for the Tragedy of the Commons archetype says that it "... identifies the causal connections between individual actions and the collective results (in a closed system). It hypothesizes that if the total usage of a common resource becomes too great for the system to support, the commons will become overloaded or depleted, and everyone will experience diminishing benefits." This is precisely the result in this case study. Referring to the BOT diagram above, note that the common storage capacity drops as the five departments in Alia's company upload their data. While each department realizes individual Net Gains,

as shown in the Tragedy of the Commons causal loop diagram, their gains are ultimately affected by the Resource Limit.

3. What is the main problem that needs to be addressed in this case study?
Alia and her staff are not taking the time to make thoughtful decisions that will ultimately impact the success of her company.

STEP 4: Generate a solution to the problem.

Systems thinking is a mindset and a process focused on identifying and solving problems. Without problems, there is little need to think systemically. In this step, you consider a full range of possible solutions and select the best one.

1. What solution do you propose for the problem in this case study?
The best solution for this case study is for Alia to work with her department heads to determine the exact data storage needs for the company and institute processes that differentiate data that needs to be securely stored from that which does not require storage. Once a thoughtful, defensible need is identified, Alia needs to renegotiate her contract with the data storage firm to acquire the right level of service.
2. What are the strengths of this solution?
This solution would address the main, underlying problem—impulsive decision-making—as well as its current symptom, the shortage of data storage space. It would also establish a more strategic approach to managing the business that should be followed when other decisions must be made in the future.
3. What are the challenges of this solution?
The challenges of this solution are that Alia must confront her own impulsive nature and potentially address the passive "order-following" behavior of her department heads. In addition, Alia may face a challenge in renegotiating her contract.
4. What other alternatives did you consider and why is your selected solution superior to each of them?
One rejected option is to demand that department heads remove any nonessential data from Dolly and going forward, upload only essential material; however, this is another impulsive decision, and the problem will, in all likelihood, recur in the future. Another rejected option is to purchase more storage space and continue to upload "everything." Again, this is not a thoughtful decision and may lead to costs that could affect the business. A third option that was considered and rejected is to look for a less expensive data storage firm; however, it is possible that such a vendor would be of lower quality and that uploaded data could be at security risk.
5. What do you project the impact of your proposed solution will be on the overall system described in this case study?
If Alia and her team adopted the proposed solution, they would be embracing a more rigorous and scrupulous approach to decision-making that should serve them well into the future. They might save costs if it is discovered that less data storage space is needed, but even if that is not the outcome, they would know that the costs dedicated to storing their important data was well spent.