

# SYSTEMS THINKING BASICS<sup>1</sup>

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## STUDENTS GROUP WORK

What is a system?

It is a group of interacting, interrelated, or interdependent components, which form a complex and unified whole.

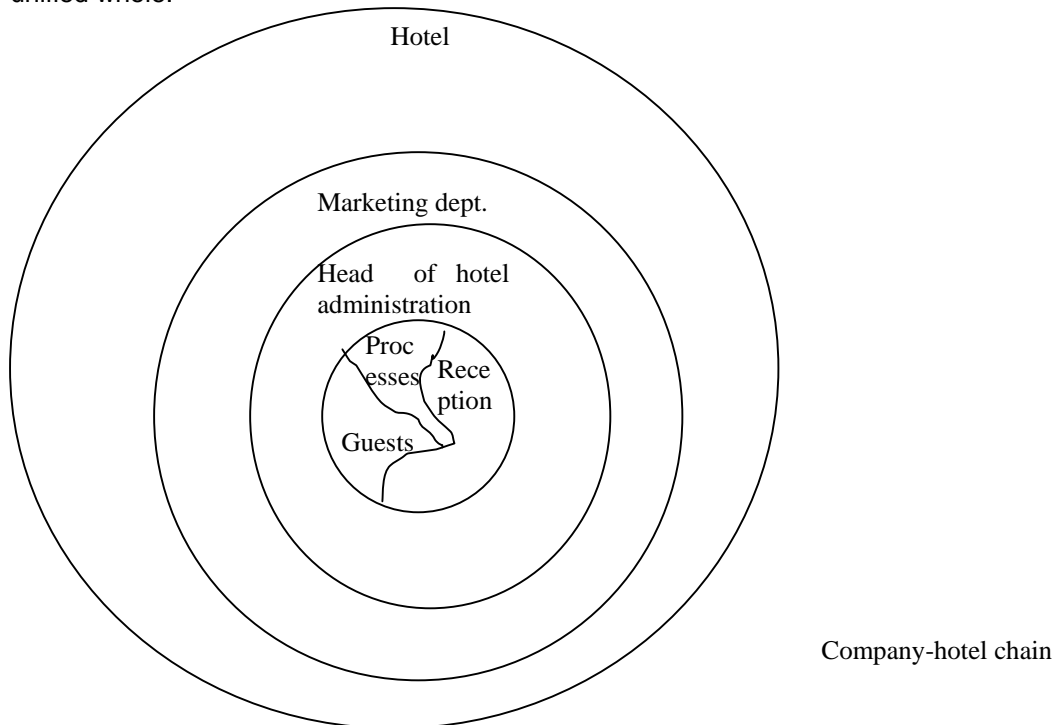


Figure 1: Interdependent Systems within Interdependent Systems

### Characteristics of Systems:

1. A system's parts must all be present for the system to carry out its purpose optimally.
2. A system's parts must be arranged in a specific way for the system to carry out its purpose.
3. Systems have specific purposes within larger systems.
4. Systems maintain their stability through fluctuations and adjustments.
5. Systems have feedback.

### Events, Patterns, Structure

Events happen all the time. Angry guests, food poisoning in a hotel, flat tyre on the bus full of tourists, fire in a hotel room. But focusing on events is like wearing blinders: you can only react to each event rather than anticipate and shape them. Solutions designed at the event level tend to be short lived.

Patterns are trends, or changes in events over time. Whenever you see a pattern of events – for example an older receptionist will always be rude to student guests, or whenever there would be strong rain, hotel would stay without electricity- you get closer to grasping the systemic structure driving that pattern.

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<sup>1</sup> Anderson, V., Johnson L. (1997) *Systems Thinking Basics: From Concepts to Causal Loops*. Pegasus communication. Williston. ISBN 1-883824-12-9

Structure always gives answers to the questions “why is this pattern happening or what’s causing this event. Thinking at the structural level means thinking in terms of causal connections. It is the structural level that holds the key to lasting, high-leveral change. Actions taken at this level are creative, because they help you to shape the future that you want.

Our ability to influence the future increases as we move from event-level to pattern level to structural level thinking, but sometimes the best action we can take must remain focused on the present at the event level-for example when a hotel room is in flame.

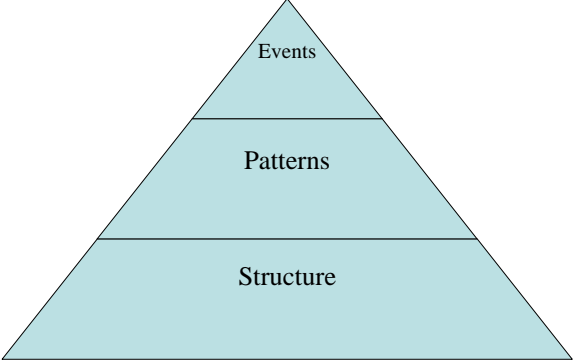


Figure 2: The Events/ Patterns/ Structure Pyramid

	Action Mode	Time orientation	Way of perceiving	Questions you would ask
Events	React!	Present	Witness event	What’s the fastest way to react to this event now?
Patterns	Adapt!		Measure or track patterns of events	What kind of trends or patterns of events seem to be recurring?
Structure	Create change!	Future	Causal loop diagrams and other system thinking tools	What structures are in the place that is causing these patterns?

Figure 3: Levels of Understanding