

Municipal Treasurers Association of the Philippines (MUNTAP), Inc.
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“Local Treasurers: Catalysts in
Transforming the Philippine
Economy Through Efficient and
Effective Revenue Generation”





Introducing Systems Thinking

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PRESENTATION OUTLINE

I. What is Systems Thinking?

II. Why Systems Thinking?

**III. What Systems Thinking Can Do
for You**

**IV. Problems of Today Were the
Solutions of Yesterday**



I. WHAT IS SYSTEMS THINKING?



Systems Thinking is seeing the consequences of my own actions, or you can look at it from a different angle in order to see the connections in any situation and to understand better how things unfold over time because again we are reacting to an immediate situation that's always assume and see things how they react; we don't see how that situation may in fact have been influenced by things we did or continue to be doing in the past. . . (Peter Senge, The Fifth Discipline)



II. WHY SYSTEMS THINKING?



You cannot solve a problem
with the same level of thinking
that you got into the problem.

Albert Einstein



You cannot meddle with one part of a complex system from the outside without the almost certain risk of setting off disastrous events that you had not counted on in other, remote parts.

If you want to fix something you are first obliged to understand the whole system.

Lewis Thomas
Essayist



The systems approach is the perfect discipline to describe and evaluate business strategy. It is particularly appropriate for the complex structures which are emerging in the new economy.

David P. Norton
Balanced Scorecard



III. WHAT SYSTEMS THINKING CAN DO FOR YOU



- ST makes you look at the big picture before you propose an intervention
- ST forces you to think through a solution so that you can anticipate unintended consequences
- ST enables you to identify “tipping points” – those leverage points to produce greater impact for intended solutions



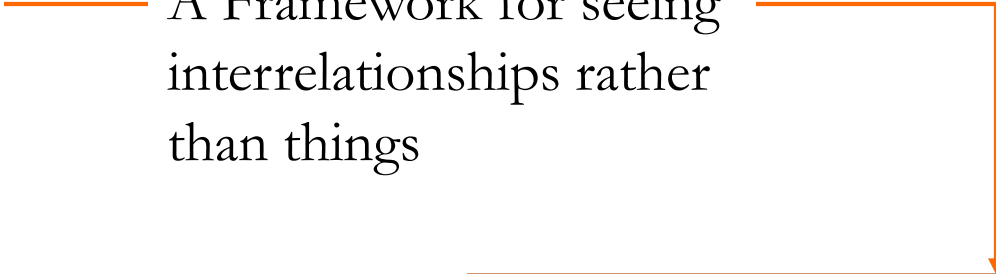
Discipline

What it means

What You Need to Do

Systems Thinking

A Framework for seeing interrelationships rather than things



**See wholes instead
of parts.
Seeing the forest for
the trees**

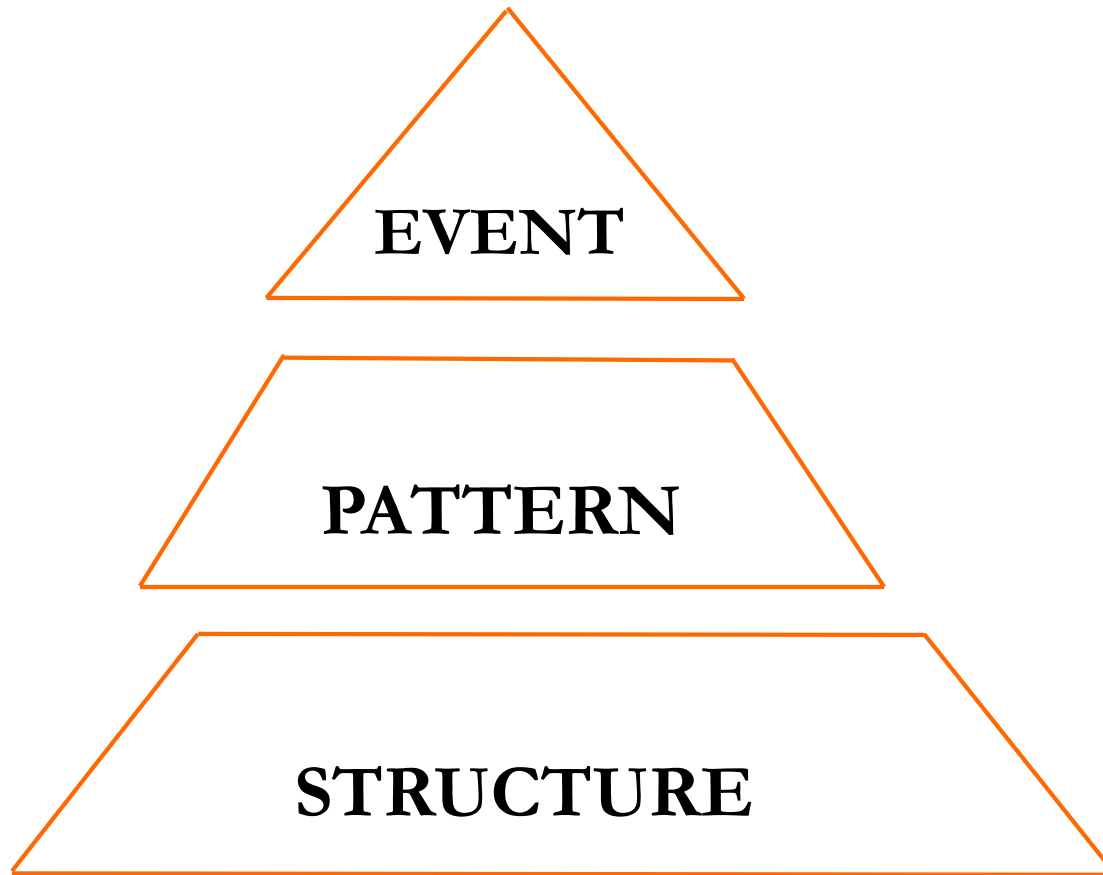


- The essence of ST discipline lies in a shift of mind
- Seeing interrelationships rather than linear cause-effect chains
- Seeing processes of change rather than snapshots



SYSTEMS THINKING:

Levels of Understanding



How to See “Structure”

Seeing the Deeper Structure

Questions to Ask

Action Perspective

What Happened?

EVENT

React/Respond

What has been happening?

**PATTERN
& Trends**

Anticipate/Plan/Prepare

What would explain the pattern?

STRUCTURE
(including Mental Models)

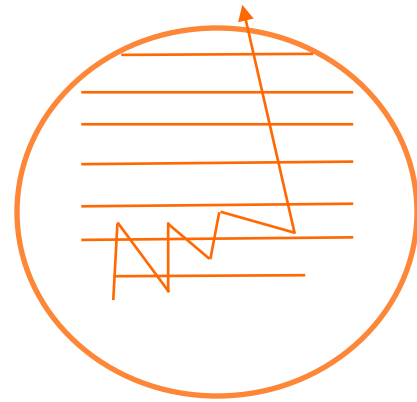
Design/Create/
Transform



The key to understanding systemic STRUCTURE is to move at the EVENT level to thinking at the PATTERN level



Systems Thinking is thinking
that it is the **STRUCTURE** that
causes the **PATTERN** which
produces the **EVENT**.



The iceberg model teaches us that systemic structures – which can include feelings, beliefs and motivations – give rise to patterns of behavior and ultimately, the events that we observe.



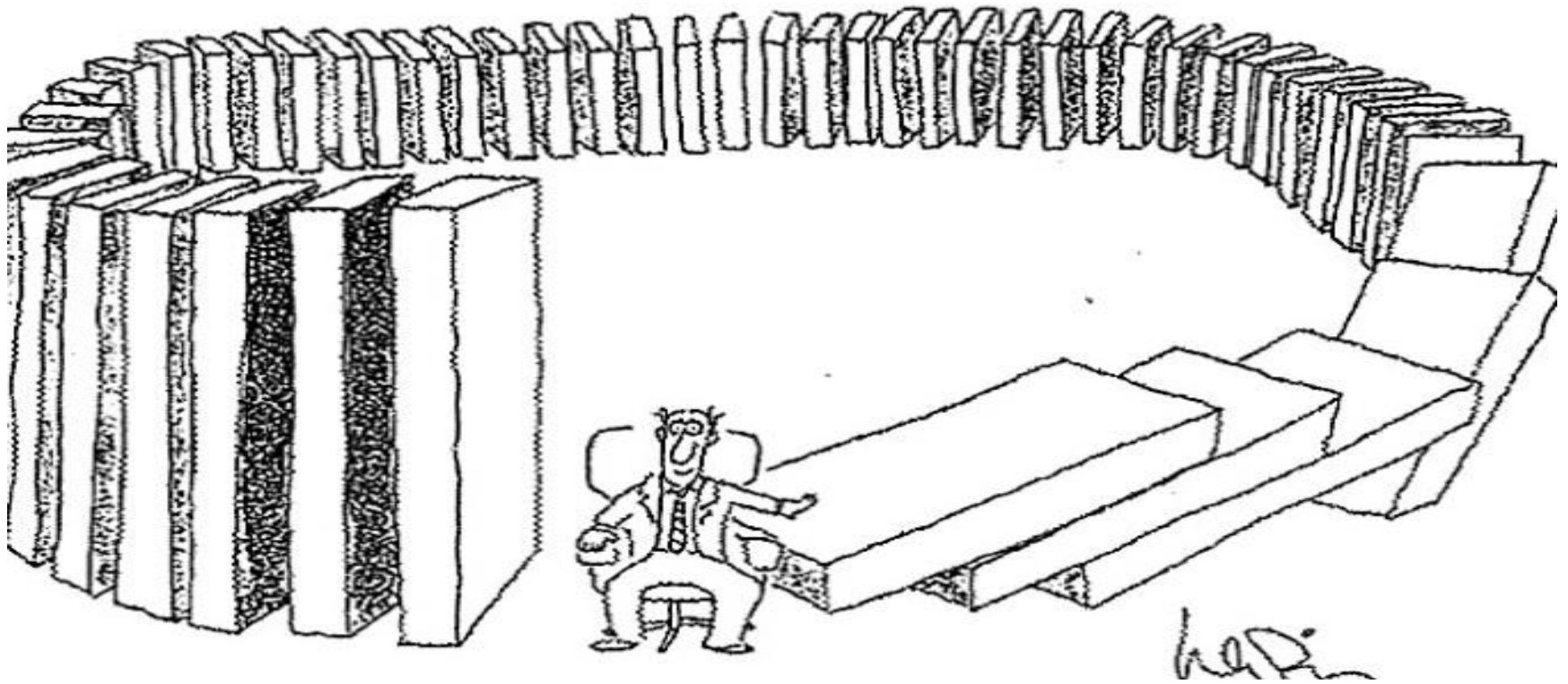
The LOOPS define the structure.

It is the **Structure** that causes

the **Pattern** (behavior) which produces

the **Event**



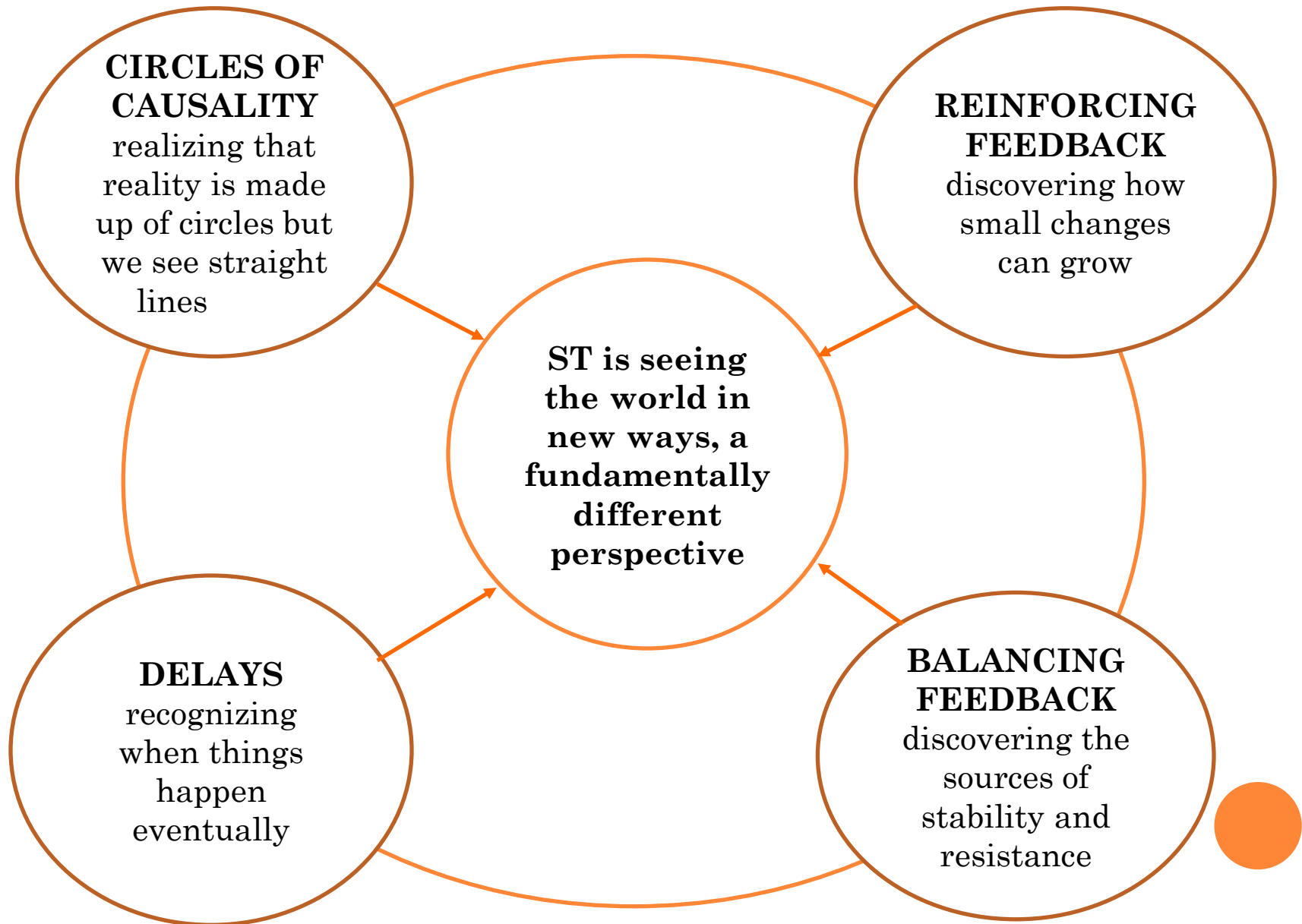


The PROBLEM of
Today

The SOLUTION
of Yesterday



The Building Blocks of Systems Thinking



IV. THE CAUSAL LOOP DIAGRAMS



- Causal loop diagramming is a powerful language for representing system structures.
- Causal loops are constructed by assuming “ceteris paribus” or “all else being equal” when assessing the direction of change in a relationship, e. g., we assume that all other influences on the variable are constant.



The ability to “sense” when there may be a systemic structure driving the results is one quality of a developed systems thinker.

John J. Sibly

The Portland Learning



Drawing Causal Loop Diagrams

1. Listen to the story
2. Listen to the story again, with “ears for variables”
3. Create variables
4. Create Links
5. See if the links make a loop



Causal Loop Language

Each Link is a causal relationship, drawn from the cause to the effect

The Sign of the link is placed by the arrowhead and tells the direction of change:
s = same direction
o = opposite direction

Hunger

B

Eating

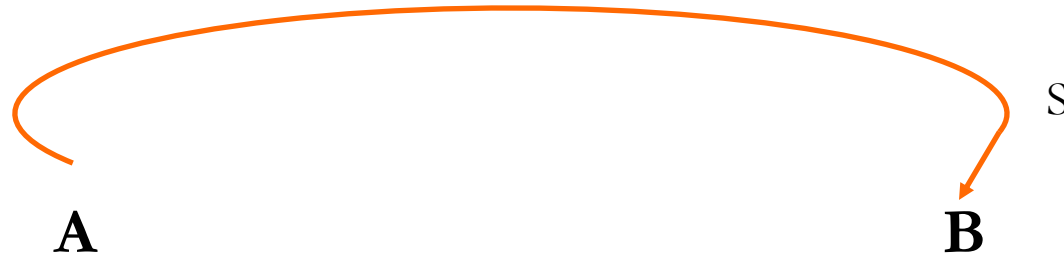
A Variable is a quality or quantity that can vary upward and downward

A Delay tells of a significant time lapse between cause and effect

The Loop notation indicates the resulting nature of all the relationships in the loop:
B = Balancing Loop
R = Reinforcing Loop



Causal Loops: Direction of Change



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If the Variable “B” moves in the same direction as “A,” the link between the two variables is labeled “s” for the same



Causal Loops: Direction of Change



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If the Variable “B” moves in the opposite direction as “A,” the link between the two variables is labeled “o” for opposite



Reinforcing & Balancing Loops

- To determine if a loop is balancing or reinforcing, count the “o”, if there are zero or an even number of “o”, then the loop is Reinforcing Loop.
- If there are an odd number of “o”, then the loop is Balancing Loop.



THE MYOPIC SELF





THE MYOPIC SELF



Thank
You

