

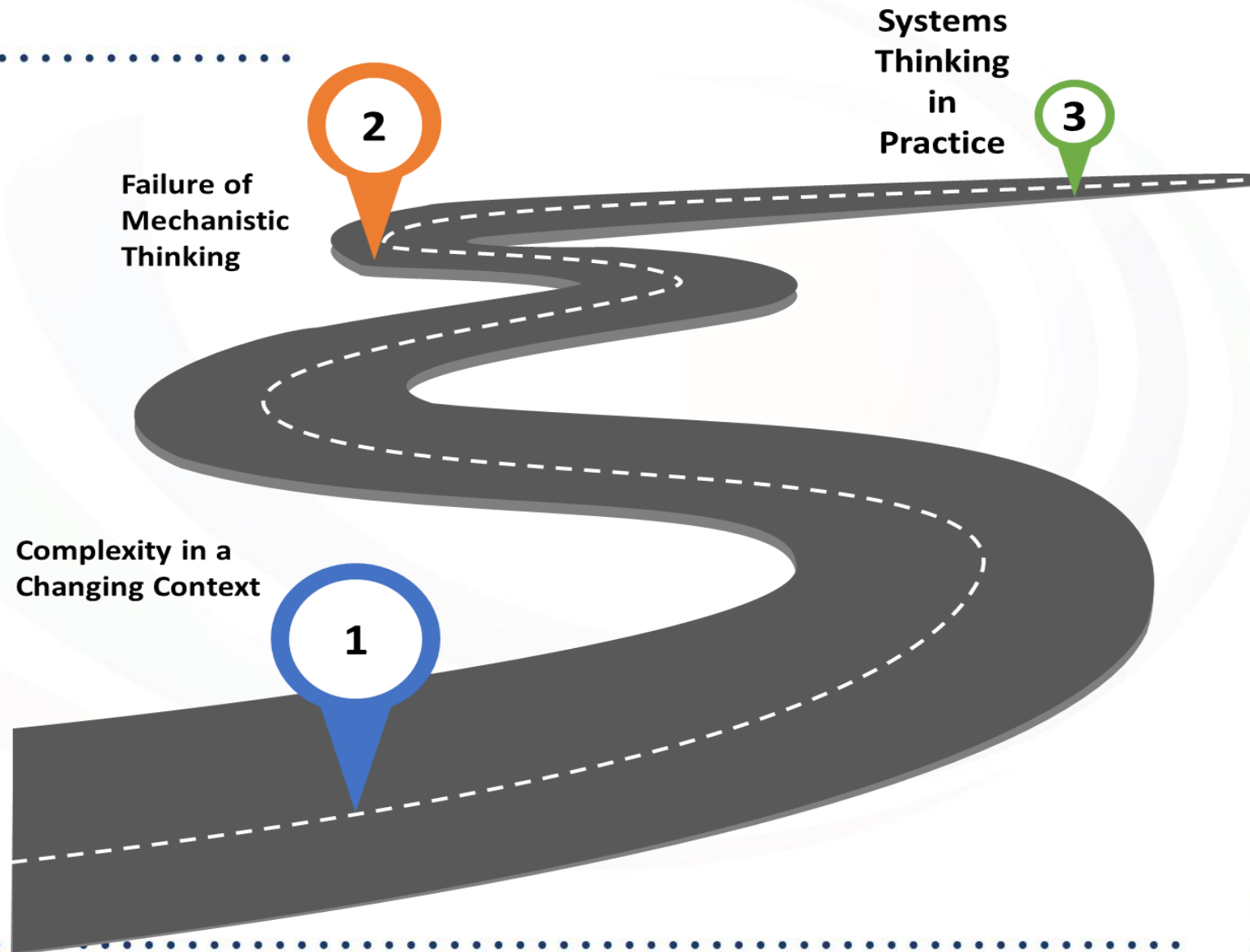
# Executive Training Programme on Leadership and Management of National Meteorological and Hydrological Services

Samuel Njenga

2023/10/24



# ROADMAP





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# Complexity in a changing context

# COMPLEXITY IN A CHANGING CONTEXT

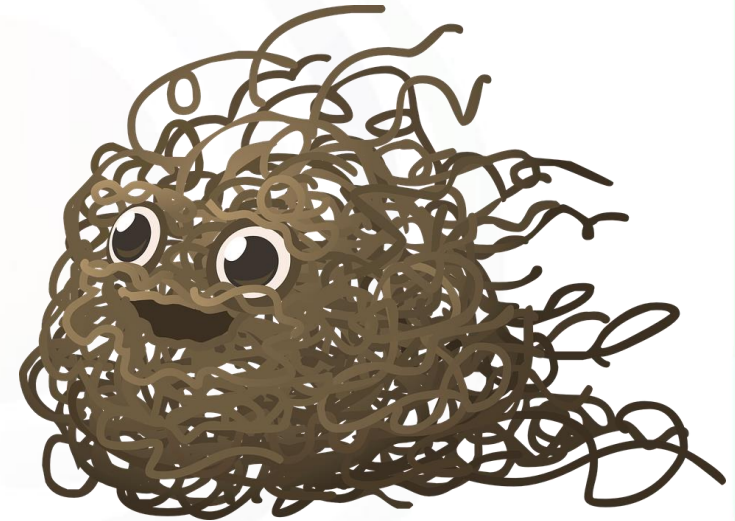
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2 mins each

- Tell the story of a mess that you have faced or are facing.
- What makes it a mess?

5 mins

- What are the common characteristics of messy situations?



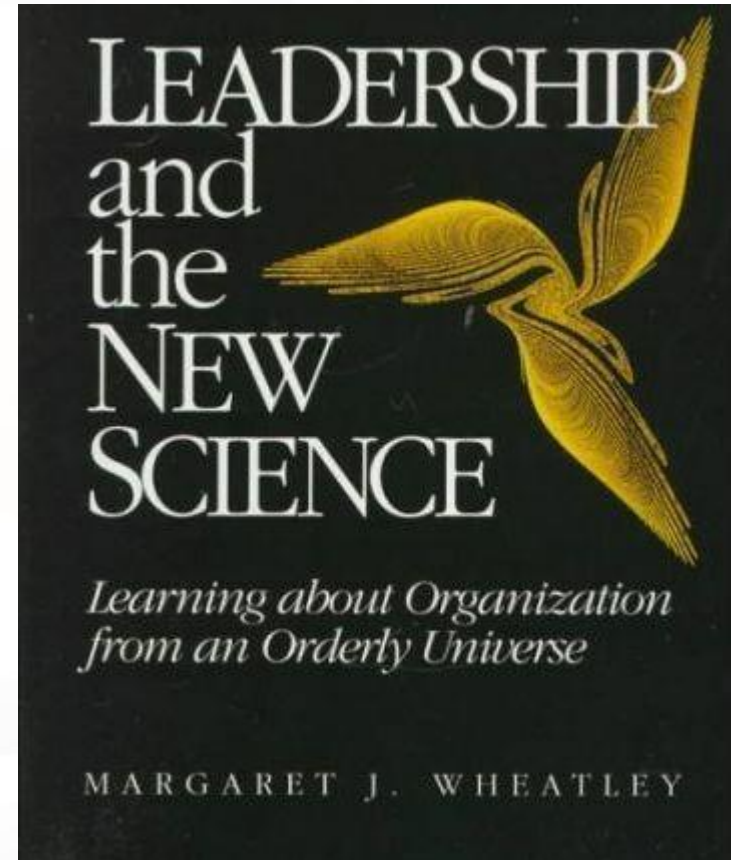
# COMPLEXITY IN A CHANGING CONTEXT

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.....  
Now I look carefully at how a workplace organizes its relationships; not its tasks, functions, and hierarchies, but the patterns of relationship and the capacities available to form them.

Margaret Wheatley



Wheatley (2001, pg 39)

# COMPLEXITY IN A CHANGING CONTEXT

.....

1. What has changed in our context and how are we adapting to these changes?
  2. What are the opportunities in our threats and what threats are in our opportunities?
  3. What assumptions are we making about this situation, what are our assumptions enabling us to see and what are they keeping us from seeing?
- .....



# COMPLEXITY IN A CHANGING CONTEXT

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## A complex system

- A complex system is one in which numerous independent elements continuously interact and spontaneously organize and reorganize themselves into more and more elaborate structures over time.

<http://www.au.af.mil/au/awc/awcgate/ndu/valle.pdf>





# COMPLEXITY IN A CHANGING CONTEXT

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Complexity is characterized by:

- a large number of similar but independent elements or agents;
- persistent movement and responses by these elements to other agents;
- adaptiveness so that the system adjusts to new situations to ensure survival;
- self-organization, in which order in the system forms spontaneously;
- local rules that apply to each agent; and
- progression in complexity so that

over time the system becomes larger and more sophisticated

.....



# COMPLEXITY IN A CHANGING CONTEXT

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**A complex adaptive system** is a system in which a perfect understanding of the individual parts does not automatically convey a perfect understanding of the whole system's behavior.

Miller, John H., and Scott E. Page (2007-01-01). [\*Complex adaptive systems : an introduction to computational models of social life\*](#). Princeton University Press. [ISBN 9781400835522](#). [OCLC 760073369](#).



# COMPLEXITY IN A CHANGING CONTEXT

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- Real world situations are **complicated**... many variables
- Real world situations are **complex**... many perspectives
- Real world situations are **conflictual**...



# COMPLEXITY IN A CHANGING CONTEXT

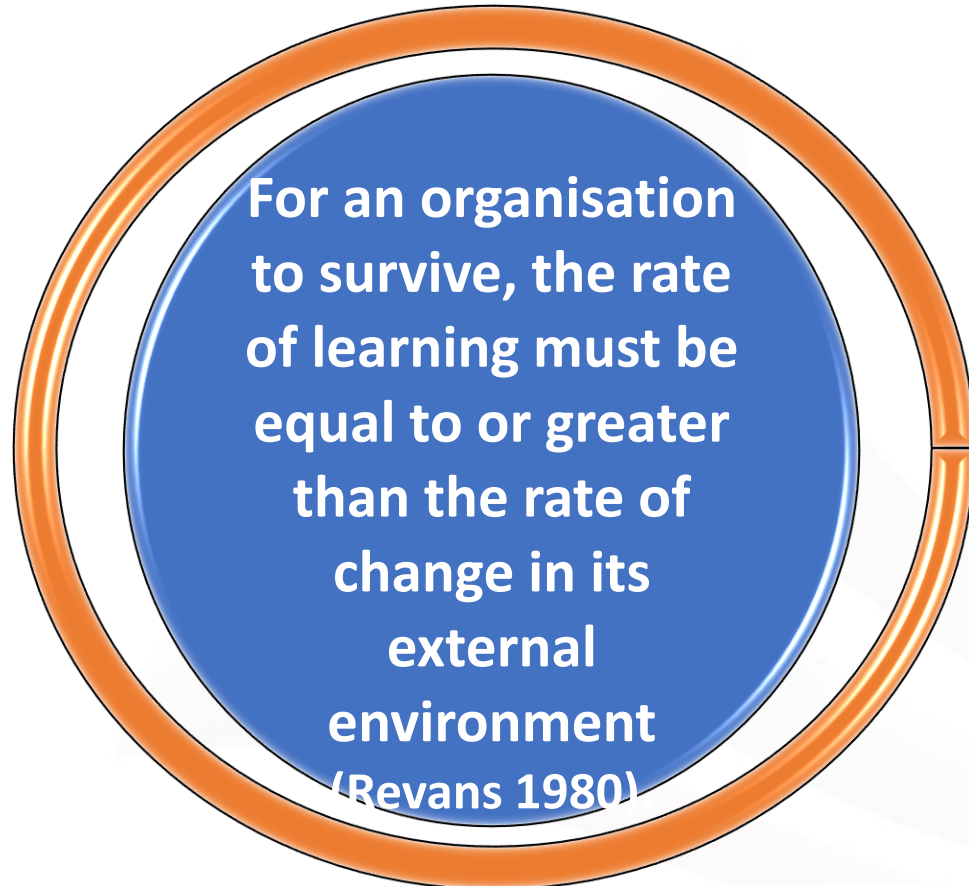
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In the swampy lowland, messy, confusing problems defy technical solution. The irony of this situation is that the problems of the high ground tend to be relatively unimportant to individuals or society at large, however great their technical interest may be, while in the swamp lie the problems of greatest human concern. The practitioner must choose. Shall he [sic] remain on the high ground where he can solve relatively unimportant problems according to prevailing standards of rigour, or shall he descend into the swamp of important problems? (p.28) Donald Schön, author of *Educating the Reflective Practitioner* (1987)



# COMPLEXITY IN A CHANGING CONTEXT

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# COMPLEXITY IN A CHANGING CONTEXT

## NMHSs CASE STUDY

- Identify a particular area of NMHS that is complex and is of concern to you.
- Brainstorm on what the business need is on the issue as well as what the organizational strategic intention is.
- What is happening in the context that has an impact on that situation?
- Who are the critical stakeholders and what is their role and perspective on the situation?
- What has been done so far to address or alleviate the issue or challenge?
- How successful have been the efforts?
- In what area of this situation is improvement needed?
- Draw a rich picture of it. (Cartoons, stick figures and very few words)





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# The Failure of Mechanistic Thinking

# THE FAILURE OF MECHANISTIC THINKING

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We are attempting to deal with problems generated by a new age with techniques and tools that we have inherited from an old one (Russell Ackoff)

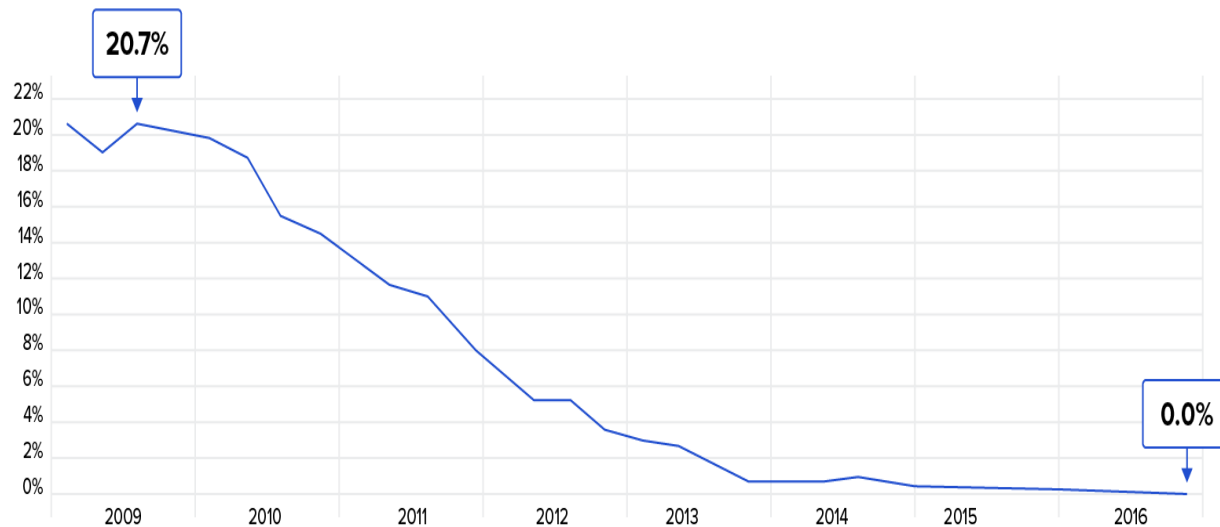


Ackoff, R.L. (1991) *Ackoff's fables: irreverent reflections on business and bureaucracy*, New York: John Wiley and sons.



# THE FAILURE OF MECHANISTIC THINKING

Market Share of BlackBerry Globally





# THE FAILURE OF MECHANISTIC THINKING

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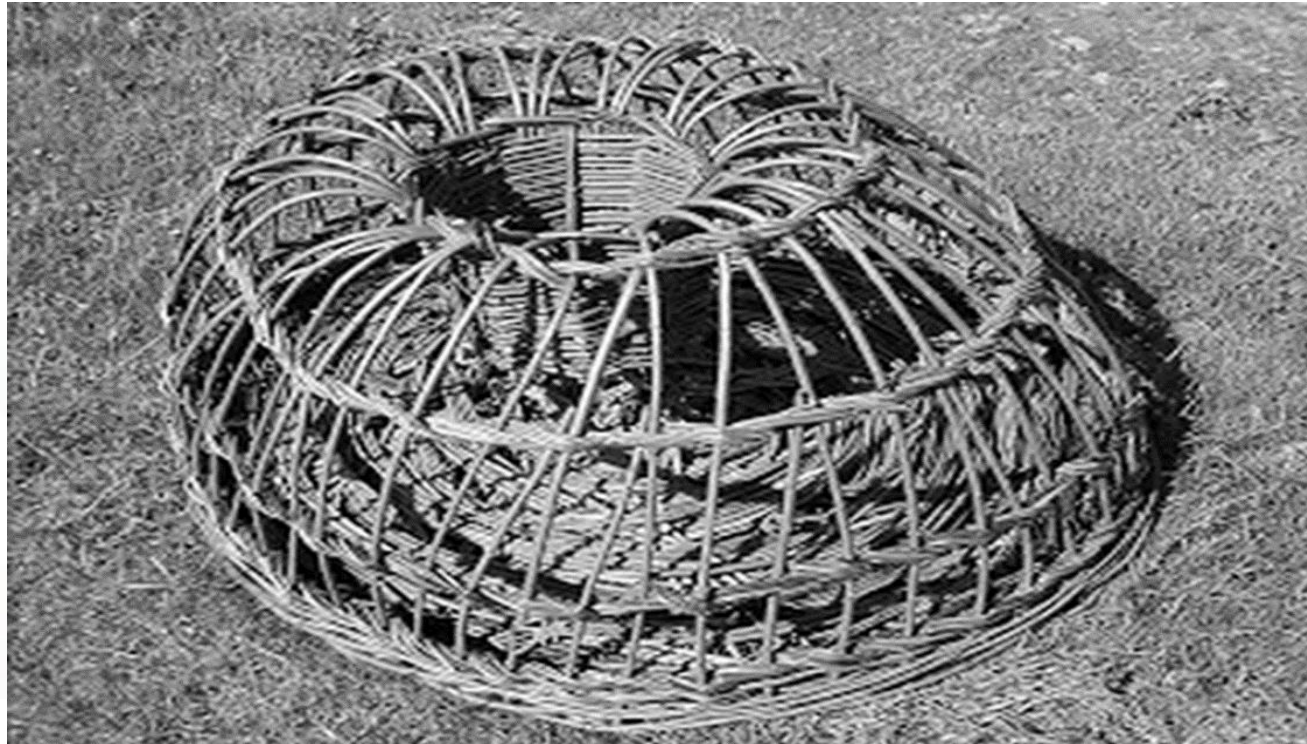
1. Failure to adapt to new technology
2. Disruptive Innovation
3. Lack of integration of external and internal knowledge
4. Complacency
5. Inconsistent Leadership and loosing focus

Khaing, P (UD) Study on Kodak's failure. [https://www.academia.edu/6509633/Study\\_on\\_Kodaks\\_failure](https://www.academia.edu/6509633/Study_on_Kodaks_failure)

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# THE FAILURE OF MECHANISTIC THINKING

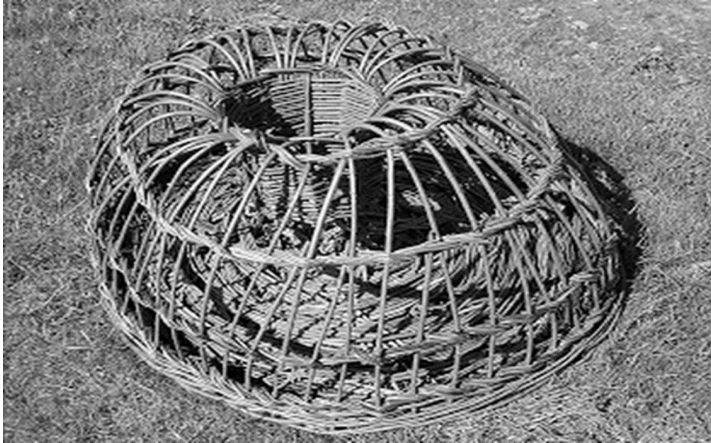
Traps in our thinking



We are trapped not by the external reality but by our thinking Sir Geoffrey Vickers

# THE FAILURE OF MECHANISTIC THINKING

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1. Habit traps
2. Victim traps
3. Blame stories
4. Group think
5. Activity traps
6. Excellence/ prior success traps

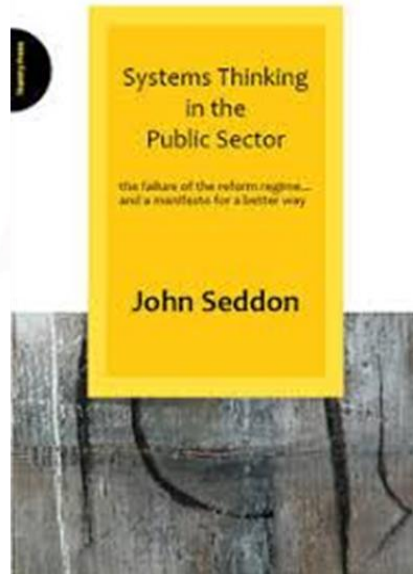


# THE FAILURE OF MECHANISTIC THINKING



Prof John Seddon

1. Not all work is performance
2. Differences between failure demand and value demand
3. 60-80% of Public sectors work is failure demand





# THE FAILURE OF MECHANISTIC THINKING



TRAGEDY OF COMMONS



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# Systems Thinking in Practice





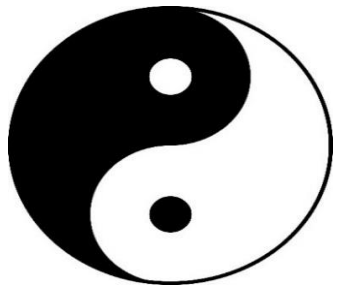
# SYSTEMS THINKING IN PRACTICE

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Systems thinking is a way of seeing, perceiving or organising our thinking about complexity and messyness in the world.

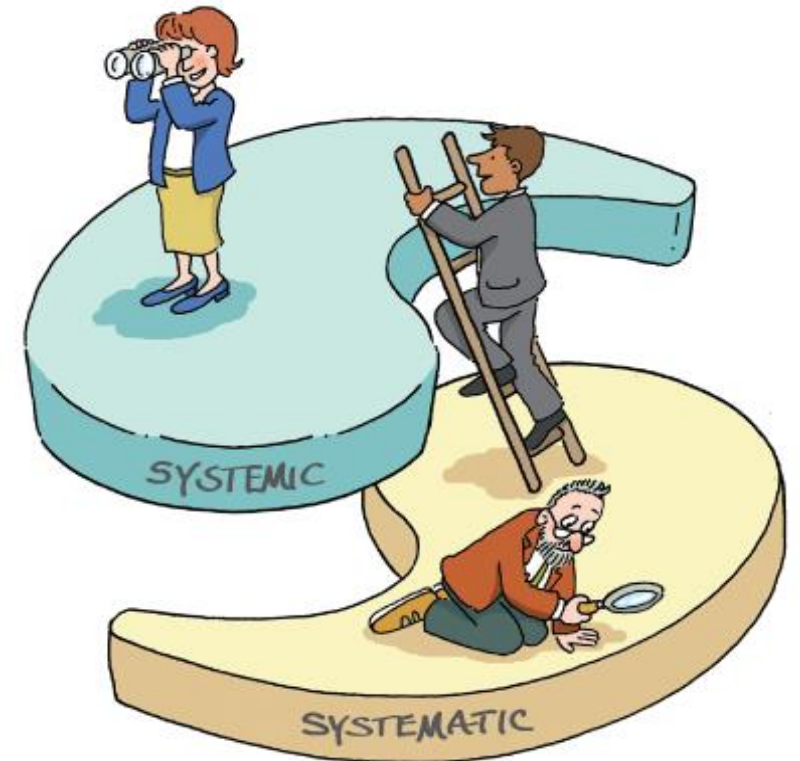
# SYSTEMS THINKING IN PRACTICE



Systems thinking practitioner = yin-  
yang

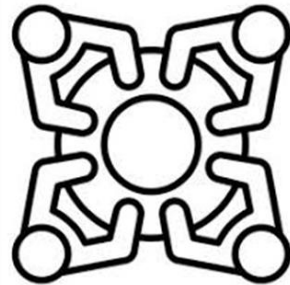
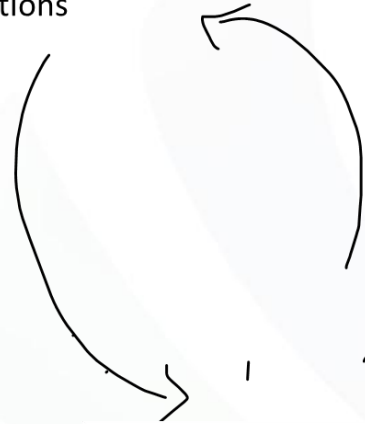
Yin and yang can be thought of  
as the **balcony** and the **dance  
floor**

Systems thinking is both systemic  
(being holistic) and systematic  
(...remaining grounded)



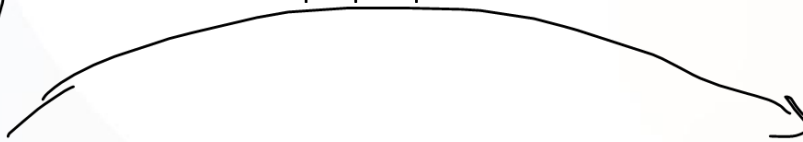
# SYSTEMS THINKING IN PRACTICE

3. Boundary critique: Critique of our assumptions



Different stakeholders/ actors

2. Multiple perspectives



The complex situation

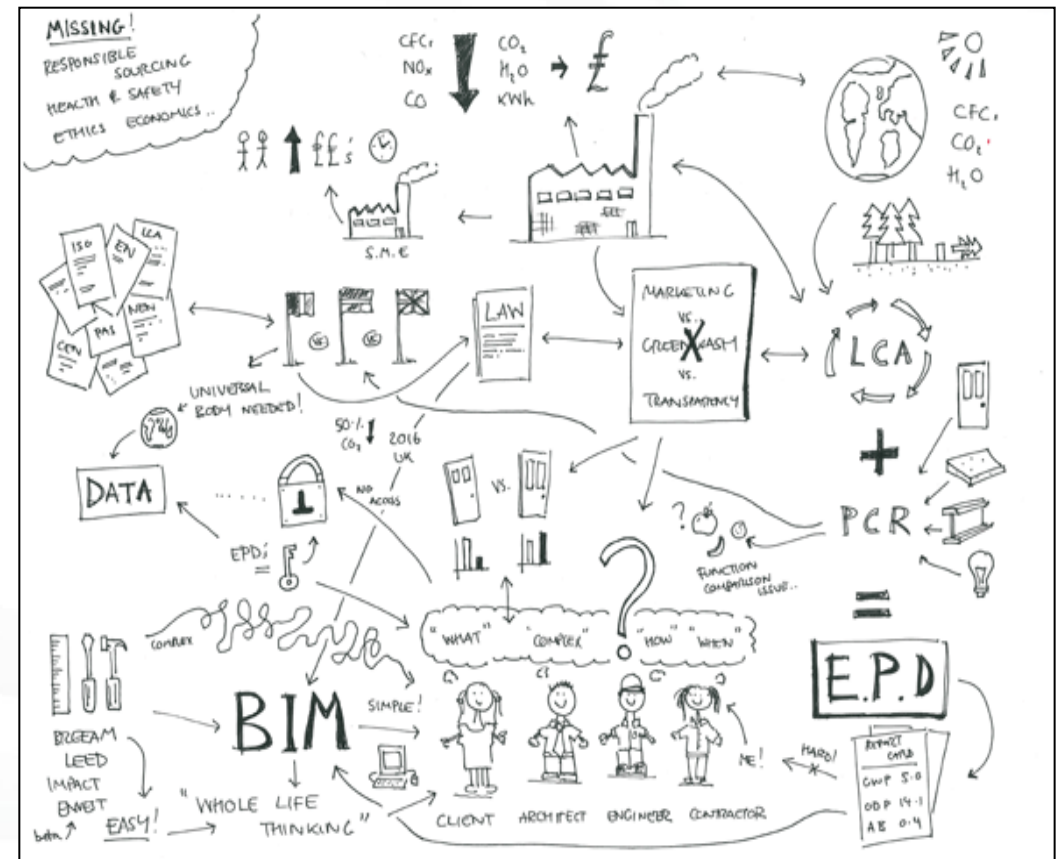
1. Interdependence and interrelatedness



# SYSTEMS THINKING IN PRACTICE

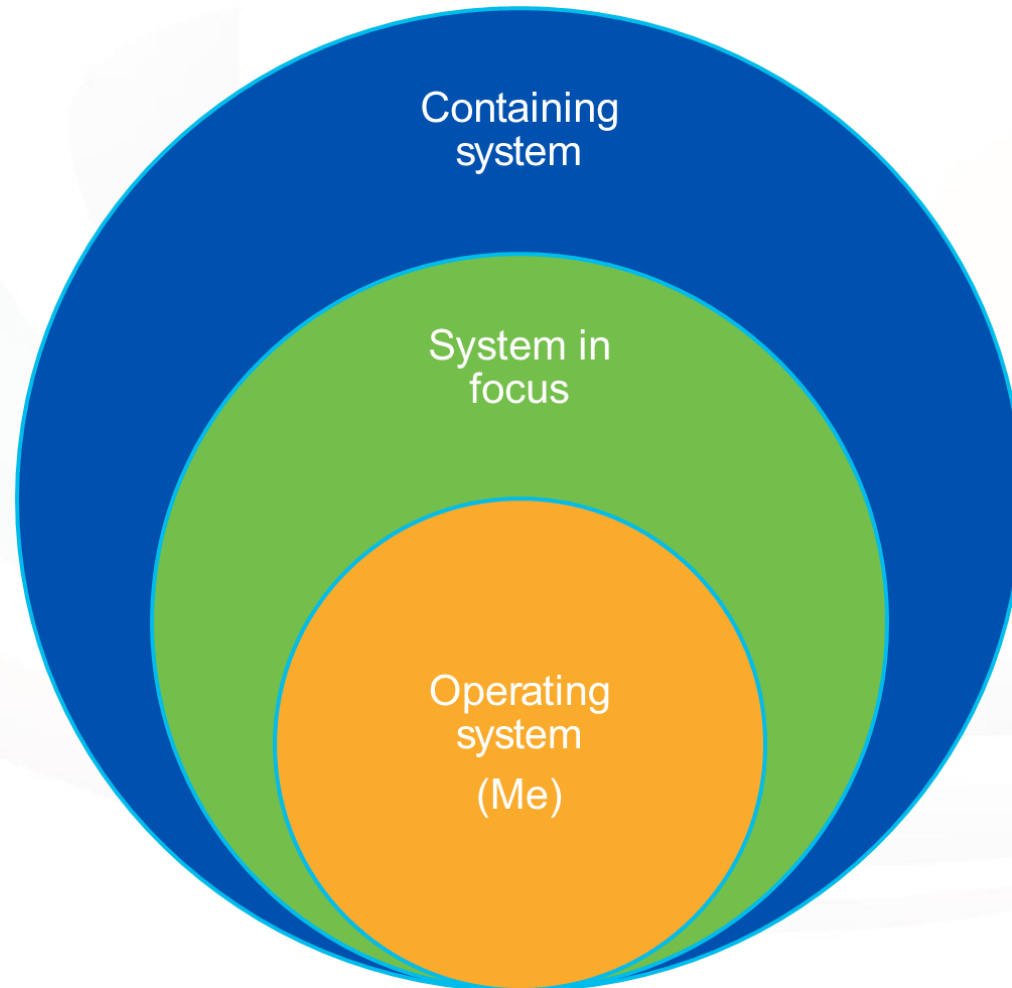
## Interrelationships: Rich Picture

- Don't structure the drawing.
- Position yourselves in the picture.
- Focus also on the 'softer' issues.
- Indicate relationships, their strength, weakness or absence.
- What is missing in your picture?
- What does the picture enable you to see better?



# SYSTEMS THINKING IN PRACTICE

.....



# SYSTEMS THINKING IN PRACTICE

What (issues, factors, influences) would we need to (investigate, do, manage) so that (the organisation, problem owner) will be able to ..(describe the desired outcome)

The specific manifested issue

Your task as a consulting team

Example

What customer needs should we investigate in order for Sammy's shop to increase customer numbers?

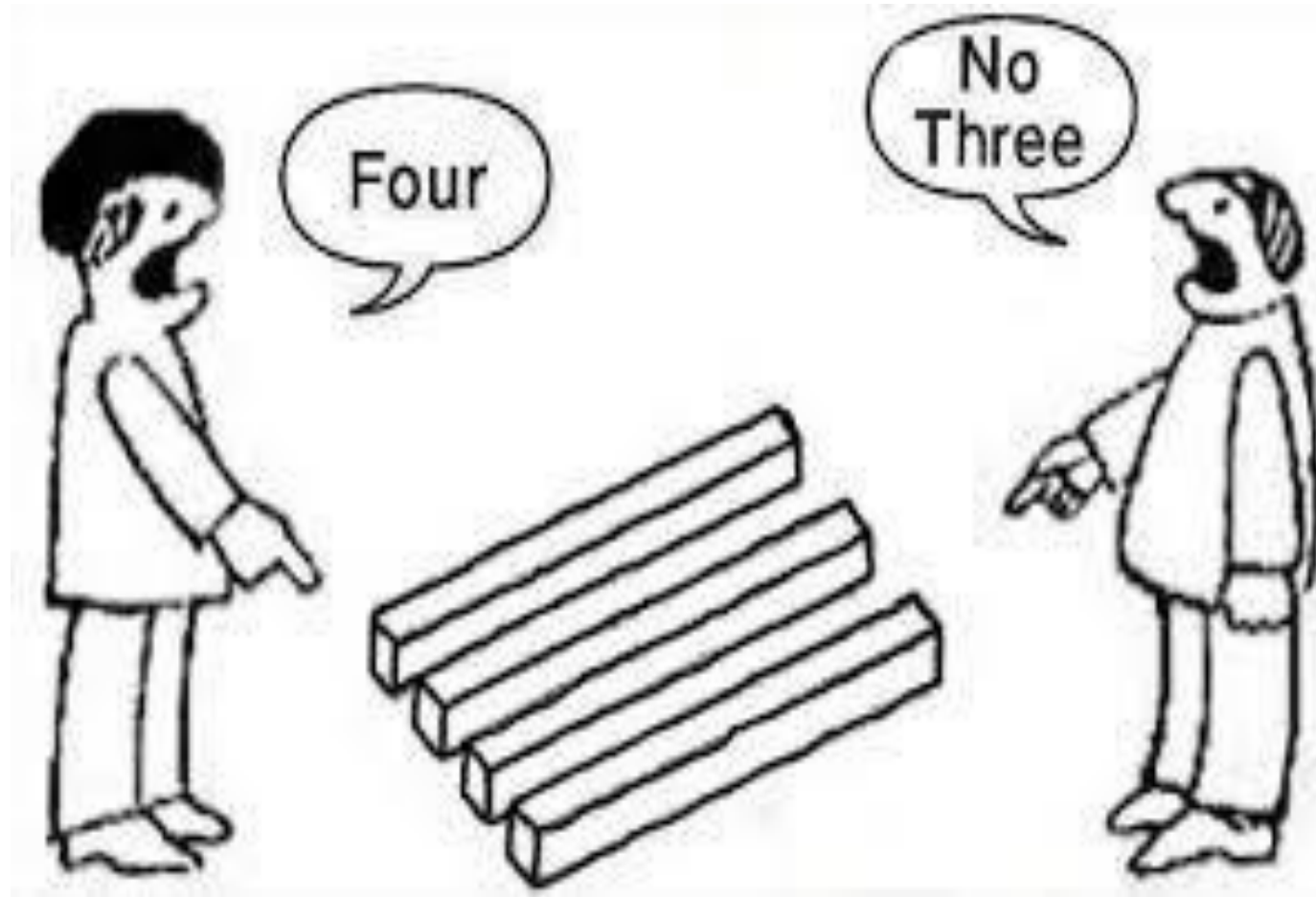
The strategic business need

The business unit



# SYSTEMS THINKING IN PRACTICE

.....



## Multiple Perspectives

“A systems approach begins when first you see the world through the eyes of another”

C. West Churchman (1968)

# SYSTEMS THINKING IN PRACTICE

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## KEY STAKEHOLDERS

1. BENEFICIARIES- Who will benefit from our intervention to improve this situation?
  2. “VICTIMS”-Who stands to lose something as a result of our intervention?
  3. OWNERS- Who needs to ok/support our recommendations for them to be implemented?
  4. EXPERTS-Who might know something about our challenge?
  5. LEGITIMIZERS- Who speaks on behalf of others? Who else might have an important opinion or stake on our challenge?
-



# SYSTEMS THINKING IN PRACTICE

	WHO ARE THEY?	WHAT ARE THEIR NEEDS INTERESTS & POWER?
CUSTOMER / CLIENT / BENEFICIARY		
'VICTIMS'		
OWNER(S)		
EXPERTS		
LEGITIMIZERS		

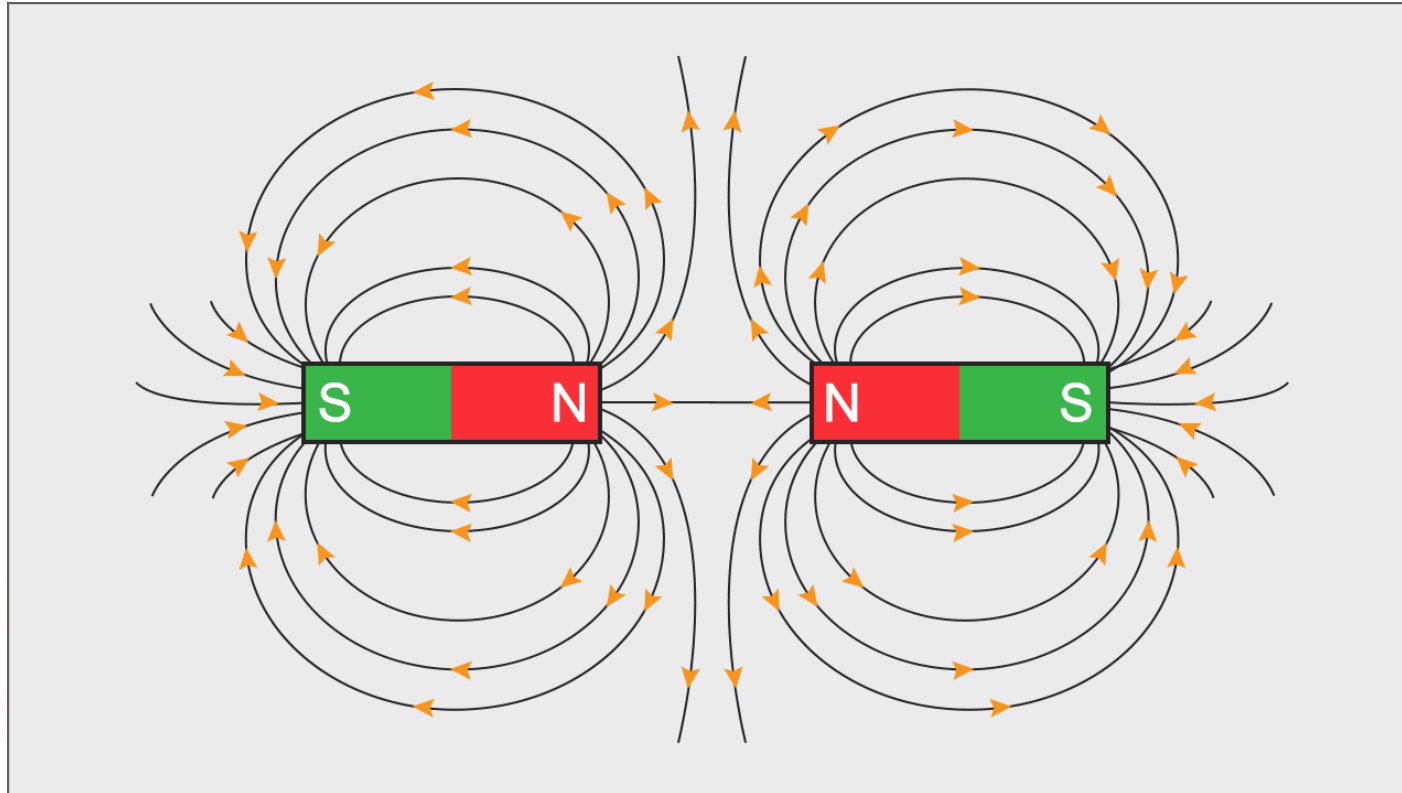
# SYSTEMS THINKING IN PRACTICE

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Boundary Critique - Gallery Walk



# SYSTEMS THINKING IN PRACTICE



“The existence of a family emotional field is the product of an emotionally driven relationship process that is present in all families.” (Kerr & Bowen 1988)

# SYSTEMS THINKING IN PRACTICE

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- We tend to make use of well-intended solutions built into the rules and structure of the system – solutions that create life-draining feedback loops...
- ... We try to solve difficulties of living and working together in ways (usually the same old ways) that make things worse by creating self-reinforcing vicious circles...



.....  
Halstead (1998)  
.....

# SYSTEMS THINKING IN PRACTICE

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## When to expect anxiety

- During a change of leaders
- When there is a shortfall in the budget or revenue
- During a major project
- When there is a sudden influx of new staff or members
- When there is a loss of staff or members
- When significant changes are announced
- When some people feel excluded from important decisions being taken



# SYSTEMS THINKING IN PRACTICE

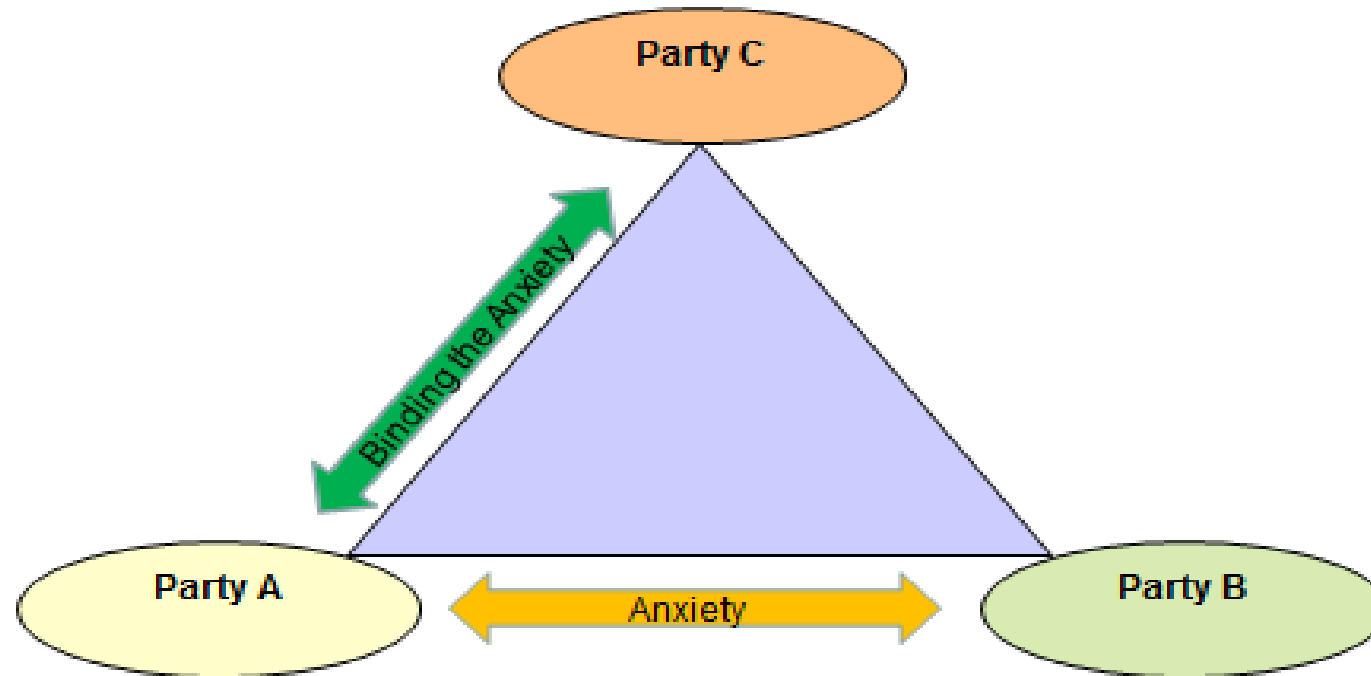
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## Symptoms of chronic anxiety- stuckness

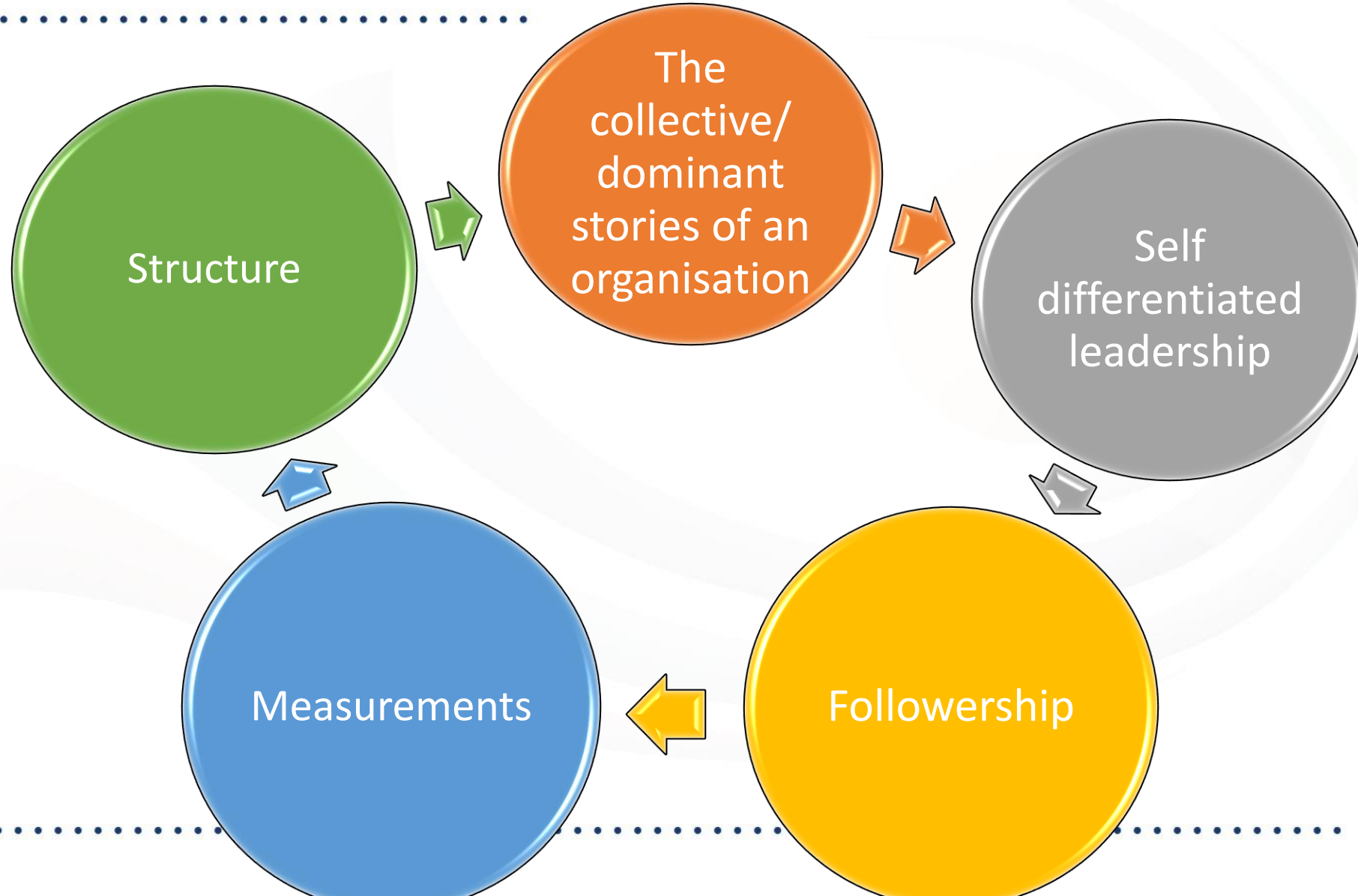
- Reactivity
- Herding
- Blame- scapegoating
- Quick fix mentality
- Lack of well differentiated leadership
- Preoccupation with past successes
- Focus on fixing image and perception rather than ‘the problem’.

# SYSTEMS THINKING IN PRACTICE

## Triangulation



# SYSTEMS THINKING IN PRACTICE





# SYSTEMS THINKING IN PRACTICE

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## Self-differentiated presence

- having clarity about one's own life principles, vision and goals,
- being able to remain calm in the presence of others' anxiety and reactivity,
- being separate while being connected





For additional information or guidance on applying the principles learnt today, contact:

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Whatsapp number 0820871962



# THANK YOU



**WORLD  
METEOROLOGICAL  
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