Systems Thinking

What you will learn:

- What is systems thinking?
- How to use systems thinking to solve complex problems

What is systems thinking?

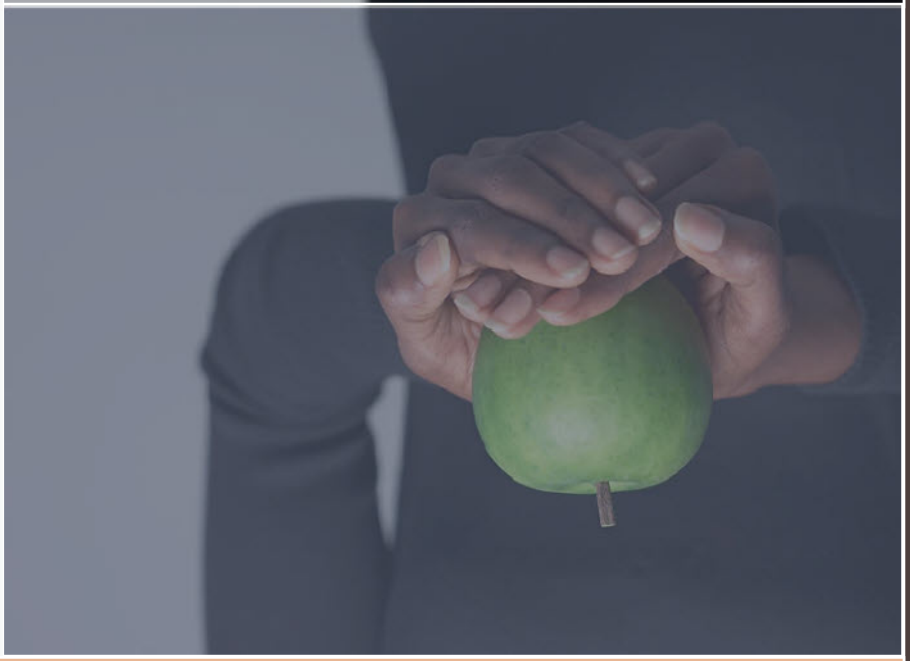
Systems thinking is all about seeing beyond what appear to be isolated and independent incidents. Recognising deeper patterns and connections between objects, people and events enables us to better understand and influence them.

Consider the human body as a system. It contains many small systems that function independently (i.e. the blood circulation system and the nervous system). However when all these systems come together a new complex system is created.

Organisations are a complex system. The overall behaviour of such a complex system depends on the total structure. Change any part of the structure and the behaviour of the system changes.

The main **benefits** of using a systems approach to thinking are:

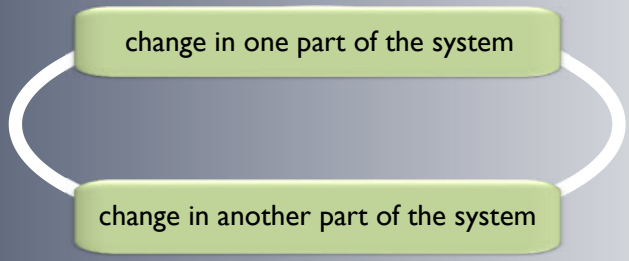
- Ability to gain influence within the organisation by seeing patterns which drive events.
- Able to predict events and prepare for them rather than be helpless in their wake.
- Provides more effective ways of solving problems, by not only solving them but changing the thinking that led to the problem in the first place.
- Enables problems to be solved quicker and more efficiently by providing the right direction and movement to shift the 'sticking' issue along.
- Provides clear communication and thought by way of seeing more and further.



What is systems thinking?

Systems thinking - think in loops.

The essence of system thinking is thinking in loops rather than straight lines.



What makes a system complex?

A system is a number of parts that are connected together. It is the mutual influence between the parts, rather than the number or size of the parts which signify the complexity of the system.

Systems with thousands of parts but with few connections, are detailed but not complex. In such instances, computers are very good at helping us to find ways of simplifying, grouping and organising the detail, thereby making it easy for us to understand a large but simple system.

Complex systems are those where the elements relate to each other in many different ways, because each part has many possible states, so a few parts can be combined in many ways. These systems are dynamic and problems that look simple on the surface may reveal many layers as we probe them. Organisations are dynamic complex systems.

We can use systems thinking in organisations in two ways:

- Understand the cause of and solve problems directly.
- Changing beliefs and habitual ways of thinking and operating.

Cause and Effect in Organisations

Using systems thinking we are able to understand that cause and effect problem solving is not quite as straightforward as we might think when we apply it to a dynamic complex system such as an organisation.

In organisations we must consider that:

- Cause and effect is circular, not linear.
- Effect may not follow closely the cause.
- Cause may lie in the structure of the system and in more than one element.
- Patterns may not be easy to see.
- Cause and effect may not be proportional.
- Cause and effect may vary greatly from the same events.

Changing habits and beliefs

Consider the following questions:

- What habits/beliefs keep the whole of the present system in place?
- Do these habits/beliefs accomplish all that we want?
- What new benefits do we want to achieve?
- What change in habits/beliefs could achieve these benefits without losing the benefits of old habits/beliefs?

Hints and Tips - Systems Thinking

Define the systems

- When using systems thinking it is important to define the boundaries of the system.
- Draw out the system you are examining, label the parts and establish all the connections between the parts.
- Show any time delay in connections.

Leverage points for change

- Challenging the habits and beliefs that support the structure of the system often provides most leverage for change.

Gaining Perspective

- A perspective is only a point of view. Systems thinking looks at how experiences relate, it is important to have many different perspectives to get as full a picture as possible.
- True objectivity is difficult to gain as it is impossible to stand completely outside the system you are part of.

A system works as well as its weakest link

- One way to make immediate impactful change is to look for the weakest link in the system and strengthen that.
- Identify the weak point by looking at which part of the system breaks down first when the system is under pressure.
- Often an unchallenged habit or belief is behind a weak point in a system.

Remember systems should be structured to ensure the are flexible and adaptable. Times change and context changes constantly, systems that are rigid do not fair so well.

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