

Systems Thinking

What is Systems Thinking?

Systems Thinking is a way of positioning yourself relative to an organisational issue. People who use systems thinking keep one eye on the big picture and one eye on the detail. They recognise how structures in one part of the organisation can impact on other parts, and they understand the longer term patterns of behaviour that lead to events and crises.

Systems Thinking provides a set of tools that support the issue focus described above. These include:

- Dynamic thinking: positioning your issue as part of a pattern of behaviour that has developed over time.
- 'System-as-cause' thinking: constructing a model to explain how the problem behaviour arises.
- 'Forest' thinking: seeing the 'big picture' and taking a more 'on average' view of the system.
- 'Operational' thinking: analysing how things actually work, the cause and effect relationships, and how performance is actually being generated.
- 'Closed-loop' thinking: moving away from laundry lists of exacerbating factors and describing the 'feedback loops' that interact to create the performance of the system (see What is System Dynamics).
- 'Quantitative' thinking: quantifying not just the hard data but also the soft variables that are operating in the system.
- 'Scientific' thinking: using models to discard falsehoods not just to ascertain 'the truth'.

What is System Dynamics?

System Dynamics is a method for studying the world around us. The main concept to system dynamics is to understand how all the objects in a system interact with one another. A system can be anything from a car engine, to a bank account, to a health economy.

The objects and people in a system interact through "feedback" loops, where a change in one variable affects other variables over time, which in turn affects the original variable, and so on. An example of this is money in a bank account. Money in the bank earns interest, which increases the size of the account. Now that the account is larger, it earns even more interest, which adds more money to the account and so it goes on.

Another example of a simple feedback loop, which we have all experienced, is adjusting a shower tap to reach a desired temperature. You turn the tap, feel the temperature and compare it to the desired temperature. You continue to adjust the water, with smaller and smaller adjustments, until you reach the desired temperature. What System Dynamics attempts to do is understand the basic structure of a system and therefore understand the behaviour it can produce.

Why Take a Systems Approach?

A Systems Approach has several benefits:

- Understand the impact of changes in one part of a system on everything else.
- Address the underlying causes of problems rather than the presenting symptoms.
- Pre-empt potential future problems or bottlenecks by thinking of the causal impact of any changes.
- Embedding changes into the centre of a system results in longevity.
- Reduce reworking which is often the result of addressing symptoms.