Step 3: System Mapping in the Horizons Foresight Method

Overview

What it is: Systems thinking is a growing set of tools and concepts to explore and map complexity. It can help us see and understand how the parts of a system are actually connected in a larger, more integrated whole. The behaviour of each part is shaped by the flow of information, resources and people between the parts. These flows can amplify or dampen the behaviour of each part. Often the whole system is nested in yet a larger system. Choosing the boundaries of the system is an art that comes from experience and a comprehensive understanding of the system under study. Generally, it is useful to consider, and maybe include, some parts of the next larger system that is the context for your system.

Some of the key concepts in systems thinking are:

- All systems are composed of inter-connected parts
- The structure of a system determines its behaviour
- System behaviour is an emergent phenomenon
- Feedback loops control a system's major dynamic behaviour
- Complex social systems exhibit counter-intuitive behaviour

In foresight, a systems approach allows analysts to see the whole picture, and that helps to identify the essential system elements to include in the study and the forces shaping the system in interesting and disruptive ways. For many people, our default pattern is linear thinking—that is, A causes B. Systems thinking helps us to anticipate surprising or unexpected behaviour as a change rolls through the system. Systems can demonstrate a variety of astonishing behaviours, including non-linear behaviour (where the change is not proportional to the stimulus), self-organizing behaviour (where new structures develop without a central authority), emergence (where completely new patterns or structures emerge), adaptation, cascading, diffusion and dissipation.

Where it fits in the Horizons Foresight Method: Even a very simple system map can make it easier for a group to talk about and explore a complex public policy issue. System mapping can occur at any point in the Horizons Foresight Method. The system map can be revised or updated as new information or insights become available. Generally, it is better to do the system map after surfacing the current assumptions and the scanning phase. That way you have a broad understanding of the possible elements in the story.

It is useful to note the close relationship between mental models and systems. People have mental models about how things work based on their knowledge and experience. By sharing and testing their mental models of the system, group members can build a collective model of how the whole system works.

Challenges in this step: In developing a system map, focus on the key elements where change is anticipated so the map is not too complicated. Often the elements that are useful to include in the map are the structures that change flows through. For example, structures can be things like institutions (e.g. family structure) or they can be institutionalized processes (food safety). More generally, they are like standing waves: there is a basic structure that remains the same as information, decisions, resources or people flow through it. When the flow changes, in quality or quantity, the structure may change.

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