

Systems Thinking

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Peter Senge describes Systems Thinking in the following words:

“A cloud masses, the sky darkens, leaves twist upward, and we know that it will rain. We also know that after the storm, the runoff will feed into groundwater miles away, and the sky will grow by tomorrow. All these events are distant in time and space, and yet they all connected within the same pattern. Each has an influence on the rest, an influence that is usually hidden from view. You can only understand the system of a rainstorm by contemplating the whole, not any individual part of the pattern.

Business and other human endeavours are also systems. They, too, are bound by invisible fabrics of interrelated actions, which often take years to fully play out their effects on each other. Since we are part of that lacework ourselves, it’s doubly hard to see the whole pattern of change. Instead, we tend to focus on snapshots of isolated parts of the system and wonder why our deepest problems never seem to get solved. Systems thinking is a conceptual framework, a body of knowledge and tools that has been developed over the past fifty years, to make the full patterns clearer, and to help us see how to change them effectively.”¹

Systems Thinking and Complexity

Complexity characterises the world and all human endeavours today - in government, business, social, natural, scientific and political spheres. Local and global problems and challenges can no longer be viewed and solved with narrow single dimensional mindset and tools. Globally effective researchers and future leaders will need to understand complexity and how to deal with it in multi-stakeholder scenarios. Systems thinking provides a scientific methodology for complex problem solving (i.e., policy analysis, strategic thinking, conflict resolution, restructuring, etc). It provides a ‘language’ for strategic thinking and multi-stakeholder problem solving. In a nutshell, Systems Thinking is the *science of integration*.

Systems Thinking deals with hidden complexity, ambiguity and mental models. It provides rigorous tools and techniques to understand and leverage change and to create lasting interventions. It helps us to understand and anticipate the long-term consequences of our decisions and actions, policies and strategies, through unfolding cause and effect relationships over time.

Systems Thinking and Problem Solving

Traditional problem solving techniques and processes are, by and large linear, sequential, reductionist and mechanistic. They often focus on problem symptoms which results in short lived solutions with adverse *unintended consequences* down the track. They overlook complex, non-linear relationships that characterise most

¹ Peter Senge, “The Fifth Discipline - The Art & Practice of the Learning Organization”, Random House, 1990, pp 6-7

real life activities and strategies. They also ignore the effect of feedback and 'delay' in complex systems leading to erroneous conclusions and further compounding effects.

Systems Thinking, in contrast, is a scientific approach that starts with the whole. It takes into account complex relationships as well as 'soft' variables that underpin human emotions, motivation and behaviour (e.g., morale, fear, frustration, recognition, resistance burnout, etc.) thus providing a holistic approach to complex policy and social issues. Systems Thinking differentiates fundamental problems from their symptoms and facilitates both short term interventions and long term sustainable strategies.

Systems Thinking goes beyond mechanistic systems, processes and structures to acknowledge and understand the human/emotional drivers of decisions and change. This happens in a 'neutral' and safe learning environment where participants examine their own as well as their organisations 'mental models' (attitudes, assumptions, norms, culture, etc).