

Developing a Strategic Learning and Evaluation System

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System

A collection of interdependent elements, or parts or members, that interact in ways to form a meaningful whole.

Systems Thinking

The best – or only – way to gain understanding is to consider the system, in its entirety, instead of examining each element individually.

Systems Thinking for Foundations

In attempting to produce a social good, foundations must “see the relationship among all of the elements. And in order to see, we must often change our thinking. We must move from seeing the world as simple, or even merely complicated. To understand social innovation we must see the world in all its complexity. . . . All complex systems, from human beings to stock markets to global organizations, share behaviors that cannot be explained by their parts. The whole is different by the sum of the parts.”

Getting to Maybe, Westley, Zimmerman, Patton (Random House Canada 2006), p. 7

Elements of Systems Thinking

- Interdependence of objects and their attributes - independent elements can never constitute a system
- Holism - emergent properties not possible to detect by analysis should be possible to define by a holistic approach
- Goal seeking - systemic interaction must result in some goal or final state
- Inputs and Outputs - in a closed system inputs are determined once and constant; in an open system additional inputs are admitted from the environment
- Transformation of inputs into outputs - this is the process by which the goals are obtained
- Entropy - the amount of disorder or randomness present in any system
- Regulation - a method of feedback is necessary for the system to operate predictably
- Hierarchy - complex wholes are made up of smaller subsystems
- Differentiation - specialized units perform specialized functions
- Equifinality - alternative ways of attaining the same objectives (convergence)
- Multifinality - attaining alternative objectives from the same inputs (divergence)

General Systems Theory: Problems, Perspective, Practice. Skyttner (World Scientific Publishing Company 2006).

Feedback

Critical question: How do we integrate useful feedback mechanisms into our Strategic Learning and Evaluation System?

Adaptive Systems

“Self-organizing systems use feedback to bootstrap themselves into a more orderly structure.”
Emergence, Johnson (Scribner 2001), 121.

Examples

- Home thermostats – takes frequent readings of a room’s temperature, compares each reading against the your preferred temperature, and then adjusts accordingly. Negative feedback.
- Global Aid – Nicholas Kristof (NYT, 5/18/11) reports that feedback on education programs in Africa has not informed decisions on new investments. Building schools or subsidizing school uniforms are popular approaches to aid, and cost about \$100 per kid, per year. Deworming kids costs about \$3.50 per kid, per year, and shows long-term benefits on education and income earned as adults.
- Grocery Shopping – “Scan It” is a device that fits on the handle of the shopping cart and enables shoppers to scan and bag their groceries as they shop, providing electronic coupons along the way and a running tally. Shoppers complete their shopping faster. They spend more money (WSJ, 5/18/11, D1).
- Polar Active – Did you fill up your bar today?
- Fitnessgram – student reports on strength, flexibility and endurance. Healthy Zone, or Needs Improvement.
- Prius – Back-up camera, real-time gas mileage.
- Google Smart Car – The car uses continual feedback from its surroundings to steer, stop and start without a driver.
- Opower’s Home Energy Reports – Monthly power bills track your usage and show comparisons to your neighbors. “Reports sent to a random subset of customers are shown to reduce energy demand by 1.8% on average.”
<http://www.grist.org/energy-efficiency/2011-05-23-a-study-of-behavior-change-and-energy-use>
- Amazon “pre-orders – Assessing consumer demand weeks or months ahead of formal publication improves inventory management.
- Education – Course grades (Pathways initiative). Edline system, a sort of Comstat for schools. “If it hadn’t been for the tracking system, I might have failed.” 17-year-old Baltimore senior. (WSJ, 6/12/09, A1).