wicked problems

Definition

Wicked problems are a class of problems characterized by great complexity and high uncertainty that make them make them resistant to resolution by traditional problem-solving processes. Wicked problems are inherently difficult to define and resolve because they result from multiple and inextricably tangled causes, they affect multiple stakeholders whose priorities and goals may vary, and because the perceived nature of the problem is affected by the possible solutions that are considered.

Abstract

Wicked problems have been recognized in the arenas of public policy, urban planning and software development. Increasingly, strategic management issues are seen to possess the characteristics of wicked problems. Managers need to be aware of these characteristics so that they can determine whether issues are 'wicked' and adopt an appropriate set of responses in order to deal effectively with these issues. These responses include the affirmation of an identity that captures the core, enduring and distinctive essence of the organization. The elements of the organization's identity serve as the criteria that are employed to assess the solutions that are generated by the use of feedforward processes and techniques such as possibility scenarios and visioning exercises that are able to cope with wicked strategic issues.

The term 'wicked problems' was popularized by Horst W. J. Rittel and Melvin M. Webber (1973). Contemporaneously, HERBERT A. SIMON (1973) recognized 'well-structured problems' as an end-point on a continuum of increasingly 'ill-structured problems'. Simon offered six characteristics of well-structured problems. Wicked problems, as described independently by Rittel and Webber (1973), possess the antithesis of these characteristics.

Rittel and Webber (1973) identified the existence and nature of wicked problems based on studies of planning in organizations. They emphasized that wicked problems do not just represent a category of problems of higher difficulty than most, but are problems that require a different approach. The fundamental challenge posed by wicked problems is that of defining them; the difficulty of both determining the organization's actual conditions and agreeing on the desired conditions. They identify ten characteristics of wicked problems, as opposed to 'tame problems', in the context of urban planning and public policy. A parsimonious set of five

characteristics in the context of STRATEGIC PLANNING is suggested in Camillus (2008):

1. The strategic issue affects multiple stakeholders with different interests and values.
2. The issue arises from many causes that are both individually complex and inextricably intertwined.
3. The issue and the solution interact, with the issue changing depending on the solution being considered.
4. The issue is being encountered for the first time and there are no relevant precedents.
5. There is no stopping rule that helps identify the right solution.

In the corporate context wicked problems arise when attempting to optimize profits and growth, balance long- and short-term performance, integrate profit seeking and social responsibility (Porter and Kramer, 2011), cope with disruptive innovations in technology and business models, and seek the fortune at the bottom of the pyramid (Prahalad, 2006).

The classic approaches to strategic planning offered by Andrews (1971), Ansoff (1965), Lorange and Vancil (1977) and Steiner (1969) are incapable of responding meaningfully to the intractable characteristics of wicked problems as they all assume an ability to define objectively the strategic issues being addressed. However, there have been developments in strategic planning that are responsive to wicked characteristics.

Addressing the challenge

The challenge of wicked problems has been addressed in a variety of disciplines. In the areas of public policy, software development and social planning, experts such as DeGrace and Stahl (1990), Conklin (2006) and Ritchey (2011) have offered broad approaches such as dialogue mapping (Conklin, 2006) and morphological analysis (Ritchey, 2011) to respond to wicked problems.

In the field of strategic planning, Gilmore and Camillus (1996) offer an inventory of responses that planning processes can implement to cope with wicked problems. Not surprisingly, work in the public policy arena provided the initial and important breakthrough in designing planning processes that address wicked problems. CHARLES LINDBLOM's (1959) article on the 'science of muddling through' convincingly argued that beginning with incremental

actions that appear to be acceptable to stakeholders or feasible in terms of implementation can, in aggregate and over time, constitute a viable strategy. Lindblom's 'root to branch' approach initiated the thinking that an action to strategy sequence may be appropriate and effective where the traditional goals to actions approach is infeasible. Essentially, this action to strategy sequence justifies the proposition that a series of experiments form the basis for formulating a viable response to wicked problems. This emphasis on action conforms to the empirical reality of emergent and crafted strategies described by (Mintzberg, 1985, 1987). The LOGICAL INCREMENTALISM model proposed by Quinn (1978) is the apotheosis of these approaches.

Responses to 'wickedness'

In addition to the broad methodologies such as dialogue mapping (Conklin, 2006) and morphological analysis (Ritchey, 2011), there are specific organizational responses to wicked problems that have been proposed (Camillus, 2008). These are:

- Affirming the organizational identity
- Adopting feedforward approaches
- Developing possibility scenarios and robust actions
- Engaging stakeholders

Affirming organizational identity: To manage the unpredictability and constant mutation of strategic issues, organizations need to be centred on and aware of what is core, distinctive and enduring about them. Albert and Whetten (1985) define what is 'central, distinctive and enduring' about an organization as its 'identity'. Support for the concept and importance of organizational identity has been growing (Santos and Eisenhardt, 2005; Livengood and Reger, 2010; Lok, 2010). The components of the organizational identity that are commonly proposed (Camillus, 2011) are:

1. The organization's *values*, which according to Freeman, Harrison and Wicks (2007) are its core logic.
2. The *aspirations* (Cyert and March, 1963) that are espoused and motivate its search for solutions.
3. The *competencies* (Prahalad and Hamel, 1990; Barney, 1991) the organization possesses that are the source of its competitive advantage.

Organizational identity provides the long-term aspirations or goals of the organization that are necessary for incrementalist (Quinn, 1978) approaches to work. Values and competencies provide the lens or the criteria through which alternative solutions are assessed to determine their fit with the organization.

Adopting feedforward approaches: Feedforward is different from traditional feedback processes which are based on learning from the past. In contrast, feedforward works back from the future. Visioning the future and identifying the enablers that offer the possibility of bringing about the desired future is at the core of feedforward approaches. Feedforward requires managers to commit to and test assumptions about cause—effect relationships The fact that feedforward does not focus on the past but attempts to define and create a desired future makes it suitable for dealing with wicked problems.

Developing possibility scenarios and robust actions: Possibility scenarios do not attempt to predict a single future. Instead they accept the uncertainties that the organization faces and delineate alternative futures that result from combinations of various states of these uncertainties (Fahey and Randall, 1998). Analysis of these alternative possible futures enables organizations to identify actions that work in all or most these futures. These relatively risk-free robust actions mitigate the higher-risk experimentation that is needed to address wicked problems.

Engaging stakeholders: While engaging stakeholders may be seen as desirable even when the organization is not faced with wicked problems, the nature of wicked problems makes such engagement both essential and different. The different values and priorities of various stakeholders demand their inclusion when framing alternative dyads of problem definitions and solutions. Stakeholder engagement is necessary throughout the process of responding to a wicked problem because as Conklin (2006) points out, the problem definition needs to be reconsidered frequently as solutions are tested.

While organizations are encountering wicked problems more frequently, managers appear to be generally ill-equipped to spot and cope with them. The criteria suggested for identifying wicked problems and the approaches recommended for managing these problems are indicative of progress being made in providing organizations with the capability to handle wicked problems.

JOHN C. CAMILLUS

See also

EMERGENT STRATEGY; LINDBLOM, CHARLES; LOGICAL INCREMENTALISM; MINTZBERG, HENRY; MUDDLING-THROUGH THEORY; REAL OPTIONS; SIMON, HERBERT; STRATEGIC PLANNING.

References

Albert, S. and Whetten, D. 1985. Organizational identity. *Research in Organizational Behavior* 7, 263–295.

Andrews, K. R. 1971. *The Concept of Corporate Strategy*. Homewood, IL: Dow Jones-Irwin.

Ansoff, I. 1965. *Corporate Strategy: An Analytic Approach to Business Policy for Growth and Expansion*. New York: McGraw-Hill.

Barney, J. 1991. Firm resources and sustained competitive advantage. *Journal of Management* 17, 99–120.

Camillus, J. C. 2008. Strategy as a wicked problem. *Harvard Business Review* 86, 98–106.

Camillus, J. C. 2011. Organizational identity and the business environment: the strategic connection. *International Journal of Business Environment* 4, 306–314.

Conklin, J. 2006. *Dialogue Mapping: Building Shared Understanding of Wicked Problems*. Hoboken, NJ: Wiley.

Cyert, R. M. and March, J. G. 1963. *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice Hall.

DeGrace, P. and Stahl, L. 1990. *Wicked Problems, Righteous Solutions: A Catalogue of Modern Software Engineering Paradigms*. Upper Saddle River, NJ: Yourdon Press.

Fahey, L. and Randall, R. eds. 1998. *Learning from the Future: Competitive Foresight Scenarios.* Hoboken, NJ: Wiley.

Freeman, R. E., Harrison, J. S. and Wicks, A. C. 2007. *Managing for Stakeholders: Survival, Reputation and Success*, New Haven, CT: Yale University Press.

Gilmore, W.S. and Camillus, J. C. 1996. Do your planning processes meet the reality test? *Long Range Planning* 29, 869–879.

Lindblom, C. E. 1959. The science of 'muddling through'. *Public Administration Review* 19, 79–88.

Livengood, R. S. and Reger, R. K. 2010. That's our turf! Identity domains and competitive dynamics. *Academy of Management Review* 3, 48–66.

Lok, J. 2010. Institutional logics as identity projects. *Academy of Management Journal* 53, 1305–1335.

Lorange, P. and Vancil, R. F. 1977. *Strategic Planning Systems*. Englewood Cliffs, NJ: Prentice Hall.

Mintzberg, H. 1985. Of strategies, deliberate and emergent. *Strategic Management Journal* 6, 257–272.

Mintzberg, H. 1987. Crafting strategy. *Harvard Business Review* 65, 66–74.

Porter, M. E. and Kramer, M. R. 2011. The big idea: creating shared value. How to reinvent capitalism — and unleash a wave of innovation and growth. *Harvard Business Review* 89, 63–77.

Prahalad, C. K. 2006. *The Fortune at the Bottom of the Pyramid*. India: Pearson Education.

Prahalad, C. K. and Hamel, G. 1990. The core competency of the corporation. *Harvard Business Review* 68, 79–91.

Quinn, J. B. 1978. Strategic change: 'logical incrementalism'. *Sloan Management Review* 20, 7–19.

Ritchey, T. 2011. *Wicked Problems: Social Messes*. New York: Springer.

Rittel, H. W. J. and Webber, M. M. 1973. Dilemmas in a general theory of planning. *Policy Sciences* 4, 155–169.

Santos, F. M. and Eisenhardt, K. M. 2005. Organizational boundaries and theories of organization. *Organization Science* 16, 491–508.

Simon, H. A. 1973. The structure of ill-structured problems. *Artificial Intelligence* 4, 181–201.

Steiner, G. A. 1969. *Top Management Planning*. New York: Macmillan.

Author Query Form

No Queries