

Complex Adaptive Systems

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WHAT'S COVERED

In this lesson, you will learn about other types of bottom-up techniques that can be used to generate Appreciative Inquiry. Specifically, this lesson will cover:

1. [Complex Adaptive Systems and Open Space Technology](#)
2. [CAS and Informal Organizational Structures](#)
3. [Fostering and Directing Emergent Change](#)
4. [Influencing Informal Structures](#)

1. Complex Adaptive Systems and Open Space Technology

The final model we will review builds on the assumption that all organizations are **Complex Adaptive Systems (CAS)**. That is, an organization is constantly developing and adapting to its environment, much like a living organism. The term was coined in 1968 by sociologist Walter F. Buckley and has since been adapted to Organizational Science by a number of scholars.

Like the Appreciative Inquiry model, a CAS approach emphasizes the bottom-up, emergent approach to the design of change. In fact, Appreciative Inquiry is one practice that works from the operating assumptions of CAS.

Another common CAS-based practice is **Open Space Technology**, a technique in which dozens of people may be involved (not to be confused with a similar label, Open Systems Theory, which we discussed in the last challenge). To set the stage, let's suppose that we want to create a series of changes to improve the culture of innovation in an organization. The first task would be to invite as many interested stakeholders as possible to participate in a discussion on various topics related to the culture of innovation, perhaps over a two-day period. At the beginning of the first session, a leader in the organization might greet the participants and invite them to be part of an open-ended exploration of ideas and solutions. A facilitator would then distribute a single sheet of

paper and a marker to each participant. She would ask each person to propose a topic or question for discussion, explaining that the purpose of this exercise is to attract other people to join a discussion.

Then she will go around the room, giving each person in turn up to 30 seconds to propose a topic or question and describe the significance and urgency of the idea. The go-around continues until a variety of topics are identified. Next, the facilitator works with participants to define a list of topics for discussion. The facilitator then designates times and locations for discussions on those topics. Finally, participants “vote with their feet” to choose groups that they want to join for discussion. Typically, each discussion in an Open Space meeting will include an exploration of key questions, actions related to those questions, and proposals for resolving key questions.

As shown by this example, this approach is similar to Appreciative Inquiry in that it focuses on involving people across the organization in identifying the paths and processes for change in the organization, with facilitators making sure those changes align with organizational goals. However, it relies less on step-by-step processes for creating change and more on broad principles that can be applied in many variations to shape the change in an organization.



TERMS TO KNOW

Complex Adaptive System (CAS)

The sociological theory that an organization can be described as an organism, adapting to its environment.

Open Space Technology

A method for free discussion among stakeholders, where leadership facilitates a discussion and may correlate suggestions to organizational goals but avoid influencing the paths and processes recommended by the larger group.

2. CAS and Informal Organizational Structures

To use the CAS approach, it is essential to understand a few key features about how self-organization occurs among employees. To begin, the direction of any organization is emergent and requires involvement from many people. Yet, when people react to change, their exact behaviors may be unknowable, unpredictable, and uncontrollable. Most often, people react to change based on the perceptions of the people in their immediate circle of relationships within the organization. Every person in an organization is both influencing others and being influenced by others. This means that a key locus of change is the relationships that people have with one another. From the perspective of CAS, a change in the nature or patterns of interpersonal relationships in an organization will lead to changes in the outcomes of that organization. Leaders, in this regard, should think of themselves as facilitators of relationships and as supporters of employees who are constantly engaged in self-organizing to create needed changes.



HINT

The CAS approach provides a useful insight on how informal structures emerge and develop through an organization; a manager or consultant may take more of a “fly on the wall” role in the meeting to see what

clusters of staff form, and how they form, as a reflection of the relationships and informal groups within the organization. An understanding of CAS, therefore, provides leaders with the key knowledge they need to influence the direction of the informal organization, even if they cannot directly control it.

3. Fostering and Directing Emergent Change

So, how can a leader (as a facilitator) influence the way in which self-organizing occurs? For starters, a leader needs to pay attention to the key conditions that allow for informal self-organizing to occur. There are three basic questions to consider.

| Question | Description |
|--|--|
| 1. To what degree do people feel empowered to act as change agents in the system? | Self-organizing originates in the people who comprise the organization. If they view themselves as change agents who have the freedom and power to initiate change, they are more likely to act, engaging in nondirected activities that may benefit the organization. Do people feel empowered as agents of the organization? If not, interventions may be designed to help people understand their own capacities and competencies. |
| 2. How connected are people to one another in the organization? | Relationships are the building blocks of all informal organizational activities. The more connected people feel to one another, the more likely they are to work with others in self-directed activity. Do people feel like they have high-quality relationships with coworkers? Are people regularly connecting with other individuals that they do not know very well? If the answers to these questions are negative, then interventions can be designed to strengthen the quality and configurations of connections within and across an organization. |
| 3. To what extent are flows of information and energy passing through the connections that exist between people? | Both informal and formal feedback loops provide a mechanism whereby people learn about what is working or not working in their activities. Do people quickly receive information about breakdowns or successes in the system? Is the emotional energy in the system generating a positive dynamic that encourages people to be engaged? Again, if the answers to these questions are negative, then processes or initiatives should be designed that will help people to communicate more effectively across their relationships. |

Aside from examining these basic conditions for self-organizing, the CAS approach assumes that every organizational outcome is the product of an indeterminable number of variables. No one cause produces a single outcome. For instance, the accurate delivery of a product to a customer is the result of a whole system of interrelated factors, each influencing the other. Therefore, where broad changes in outcomes are desired, the whole system of interrelated factors needs to be engaged at once. The preferred method of doing this is to engage broad groups of stakeholders simultaneously, using dialogue and conversation to help people develop their sense of agency, their connections with others, and the processes that need to be adjusted to create

desired changes in outcomes. Appreciative Inquiry is one method that works especially well to accomplish all these impacts.



TERM TO KNOW

Change Agent

Someone within an organization who has the freedom and power to initiate change.

4. Influencing Informal Structures

In addition, leaders may also influence the structures that shape patterns of self-organizing. From a CAS perspective, a structure is anything that causes people to engage in a particular pattern of activity. Structures can be physical, such as the work environment, or they can be assumptions or beliefs that are broadly held, such as the ideas about bureaucracy we discussed earlier in this chapter. To create change, leaders can change the structures that are producing current patterns of organization.

There are three ways in which self-organizing structures can be altered.

| Way to Alter | Description |
|--|--|
| Influence the boundary conditions that establish the limits for emergent activity. | Boundary conditions are the degree of self-directed action that is available to employees. Giving employees more responsibility, empowering them to make decisions at the local level, and providing them with more discretion in the work they do are some of the ways that the boundary conditions may be expanded. The more undefined the boundaries, the more self-organizing can be expected. |
| Introduce positive disturbances to the system. | Disturbances are actions that disrupt an organization; positive disturbances are actions that disrupt an organization's practices to change it in positive ways. Sometimes this can be as simple as helping employees learn about the tensions that exist within an organization around existing patterns of self-organizing activity. For example, there are nearly always significant differences in perspective among different subgroups in an organization. Helping employees to have conversations with others who have significantly different perspectives can introduce a positive disturbance that causes people to reorganize their activities to overcome hidden structures. In manufacturing organizations, for instance, it is common for engineering and production departments to be isolated from one another. Dialogue that includes and connects the employees from such groups can help them overcome and change the structural assumptions that may cause them to self-organize in ways that antagonize the other. The conversation itself can be a catalyst for change. |

| | |
|--|--|
| <p>Improve the flows and connections that exist among employees across the organization.</p> | <p>It is essential to a healthy organization to regularly create opportunities for transformational connections, in which employees are able to learn about the perspectives of other areas of an organization. As they develop and maintain healthy connections, they will empathize with and consider those perspectives as they engage in their own self-organizing activities.</p> |
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The CAS approach provides both a perspective and a set of principles that can be used in many ways. Many methodologies build on the assumptions of the CAS approach. As noted, these include Appreciative Inquiry and Open Space Technology. In this section, we have barely scratched the surface of the variety of practices that can be used to catalyze change. At minimum, though, you understand the power of these practices in an organization, which will allow you to read further about other potential methods.

 TERMS TO KNOW

Boundary Conditions

The degree of self-directed action that is available to employees.

Positive Disturbances

Actions that disrupt an organization to make positive changes occur.

 SUMMARY

In this lesson, you learned about the **Complex Adaptive Systems and Open Space Technology** approaches to change management. The CAS approach makes the assumption that organizations are constantly changing and adapting. Open Space Technology is a process for facilitating discussion of a large group of stakeholders to determine the paths and processes for change, rather than make those decisions at the top. These models, like Appreciative Inquiry, focus on bottom-up, emergent approaches to change. In order for CAS to be effective, understanding the formal structures and **informal structures** that exist in organizations can assist the manager in helping them better understand how to implement change. This approach requires the manager in a facilitator role to **foster and direct change** but avoid **too much influence** that can get in the way of free discussion.

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