Guest editorial

Ecosystems and intelligence: a void in organizational learning

This essay deals with organizational learning. Highly cited articles in the 1990s articulated the nature of organizational learning (Crossan, 1999; Huber, 1991; March, 1991). One important outcome of these and other important works (Argote, 1999; Cangelosi and Dill, 1965; Cohen and Levinthal, 1990; Goh *et al.*, 2012) was the generation of a great deal of scholarly work dealing with organizational learning. A second important outcome was the creation of two new journals focused on organizational learning, *Knowledge Management Research and Practice* and *The Learning Organization*. There is now a huge literature on the subject, driven partly by the importance of organizational learning to the welfare of society.

As it is commonly understood, organizational learning occurs when an organization's members revise their beliefs in ways that, when the beliefs are acted upon, improve the organization's performance (Argyris and Schon, 1978, p. 323; Fiol and Lyles, 1985, p. 803; Huber, 2004, p. 118). This definition is useful for everyday use, but it is narrower than one might think; individuals can learn and yet not exhibit changes in their behavior or performance. For example, at the individual or organizational level:

> [. . .] learning may result in new and significant insights and awareness that dictate no behavioral change [. . .] The choice may not be to reconstruct behavior but, rather, to change one's cognitive map or understandings (Friedlander, 1983, p. 193).

Weick's (1995) sensemaking process is an example of this phenomenon. "Sensemaking happens long before people imagine that there might be some kind of decision to be made" (Weick *et al.*, 2005). A broader definition of learning at the individual, group or organizational level is that "[an] entity learns if, through its processing of information, the range of its potential behaviors is changed" (Huber, 1991, p. 89). As examples of changing potential behaviors, oft-used actions, rather than being continued, could be discarded or new actions could be created and initiated.

The very large size and maturity of the organizational learning literature prompts a question: Are there any issues that have received less attention from organization learning scholars than the issue merits? Specifically, have organizational environments changed during the preceding quarter century such that there is a need for organizational learning research with foci different from those already established in the literature? I believe that there is. This essay describes one such issue. The issue involves two concepts, organizational ecosystems and organizational intelligence.

Ecosystem

An ecosystem is "a biological community of interacting organisms and their physical environment, or in general use, a complex network or interconnected system" (Haghshenas and Richards, 2016, p. 114). As used here, an organization's ecosystem consists of all of the entities, events, circumstances and relationships in the organization's environment. Congruent with this broad definition is that the ecosystem associated with America's "national security now subsumes concerns about the geopolitics of energy, global financial flows, spread of infectious disease, and the safety of individual American citizens anywhere

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on the globe" (Fingar, 2011, p. 7). Modern information technology (e.g., earth-monitoring satellites, online search engines, online news media, computer-hacking software) enables the organization's ecosystem to approximate the world's ecosystem. Because an organization is a part of its environment, it is a component of its ecosystem.

The most relevant *entities* of concern to organizations are generally other organizations in the organization's ecosystem (Pfeffer, 1987; Pfeffer and Salancik, 1978). Therefore, the organizations of concern to military or business organizations would generally be the military or business organizations with which the focal organization is, or is expected to be, in competition.

Organizational intelligence

The classic work on organizational intelligence is that by Wilensky, a sociologist who, when writing his book (Wilensky, 1967) took on the role of a historian of US military intelligence during the Second World War. Wilensky defines organizational intelligence as the *practice* of "gathering, processing, interpreting, and communicating the technical and political information needed in the decision-making process" (Wilensky, 1967, p. 3). In contrast, a broader definition which doesn't limit the types of information to "technical" and "political" is that "organizational intelligence is a practice that seeks to aid decision makers by determining the nature, capabilities, circumstances and likely behaviors of entities of interest to these decision makers" (Huber, 2014, p. 1211). Nutt's extensive field studies of organizational intelligence gathering (2005, 2007) found organization actions to be congruent with this definition. As a *product*, organizational intelligence is the outcome of the acquisition and interpretation of relevant data.

Because some of the contents of this essay will be unfamiliar to many readers, the essay includes elements of a tutorial on ecosystems, organizational intelligence, and related concepts. The remainder of this essay is as follows. First, I describe two issues which I believe are important to the organization learning field. I then introduce a few gateways into learning about the practice of creating and distributing organizational intelligence in the context of an organization's ecosystem. These gateways are descriptions of antecedents to organizational ecosystems or to organizational intelligence, including an early normative attempt at creating an organizational intelligence system.

Issues within the essay

Three issues need to be addressed. The first concerns the fact that scholarly work addressing the need for organizations to create effective organizational intelligence systems, for monitoring and acting on their organization's ecosystem, is absent from the organization learning literature. The organization field must remedy this situation, must fill this void.

The second issue concerns what I see as professional opportunities. I take it as given that the world's ecosystem (which here is assumed also to be the organization's ecosystem) is changing. The world's ecosystem is becoming more complex and much faster moving than it has been in the past (Friedman, 2016; Kelly, 2017). The need for organizations to be effective in designing and managing their intelligence systems will continue to grow. Their top managers will recognize this. Organization learning researchers have expertise that could be of considerable use in this endeavor. The opportunities for conducting interesting research could be considerable.

The third issue concerns professional responsibilities. I take it as given that organizations must today, and in the future, more quickly and effectively assess the need for and nature of survival-facilitating actions, and that to do this they must proactively engage in intelligence gathering about the state of their ecosystem. There is a societal need for

organizational learning researchers to learn effective organizational processes for sensing and capturing facts about the ecosystem and to share what they have learned with the relevant organizational entities.

Gateways into the design of intelligence systems

Complexity Science (Cook *et al.*, 2015; McDaniel *et al.*, 2003; Zuchowski, 2019) is concerned with complex systems and problems that are dynamic, unpredictable' multi-dimensional, non-linear and that consist of a collection of interconnected parts and relationships. These conditions characterize most organizational ecosystems. Thus, organizational intelligence systems must be designed to deal with non-linearity.

Organizational communication and knowledge management. The organizational behavior and organizational science literatures contain a good deal of information about the acquisition and intra-organization transportation of knowledge and information. The journal, *Knowledge Management Research and Practice*, frequently publishes articles dealing with intra-organization information transportation. Here it will be convenient to refer to two National Academies Press books authored by the Committee on Behavioral and Social Science Research to Improve Intelligence Analysis for National Security (2011a, b) as Book A and Book B. Both books are listed in this essay's References (see also Walsh, 2011). Book A has a chapter dealing with communication between ecosystem analysts and users of the analyses. It is important to recognize that many of the difficulties in organizational information systems and knowledge transfer are caused by human errors or biases (Huber, 2001; Kang, 2016).

Normative tutorials. For an instructive tutorial on the design of an intelligence system, here I draw on Huber (2004, pp. 53-58). This tutorial describes a hypothetical business structure and system for monitoring its environment and for conveying relevant findings to those organizational personnel who are likely to be interested in using the information on the organization's behalf. To ensure that its environment surveillance system is sufficiently dense in its coverage and is capably staffed, the organization arranges for intelligence gathering in specialized sectors to be a focal and formal responsibility of the personnel with the relevant expertise to recognize information that is organizationally relevant. The responsibility of each of these environmental sensors includes conveying organizationally relevant findings to appropriate personnel. Overall, the process is congruent with the work on absorptive capacity (Aribi and Dupolet, 2016; Cohen and Levinthal, 1990; Noblet *et al.*, 2011) and with the idea that the elaborateness of a living system's sensing system must be congruent with the complexity of the system's environment.

Shortcomings of this approach are that:

- It does not encourage employees to report important observations that are not in their specialized sector.
- It does not ensure coverage of those many features of, or events in, an organization's environment that are not associated with anyone's expertise.

These problems are addressed by creating an "Everyone a Sensor" culture, a culture where all employees are encouraged to view themselves as potential environmental sensors for the entire organization and to take actions to fulfill this role. Here, rather than being a focused responsibility, intelligence gathering is an eclectic responsibility. Such intelligence gathering can occur in many contexts, for example at trade shows, while reading professional materials, or when socializing. Also covered are suggestions for designing reliable and easy to use systems to facilitate sensors' communication of their important observations.

Summary

- There is a societal need for organizational learning scholars to learn effective organizational processes for sensing and capturing facts about organizational ecosystems and for distributing what they have learned to the relevant societal entities. There is a responsibility to be fulfilled.
- Scholarly work addressing the need for organizations to create effective organizational intelligence systems, for monitoring and acting on their organization's ecosystem, is absent from the organization learning literature. The organization field must remedy this situation, must fill this void.
- The world's ecosystem is becoming more complex and much faster moving than it has been in the past. The need for organizations to be effective in designing and managing their intelligence systems will continue to grow. Their top managers will recognize this need. Organization learning researchers have expertise that could be of considerable use in this endeavor. The opportunities for conducting interesting research could be considerable.

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