Chapter XVI

Exploiting Reusable Abstractions in Organizational Inquiry: Why Reinvent Square Wheels?

Haim Kilov
Independent Consultant, and Stevens Institute of Technology, USA

Ira Sack
Stevens Institute of Technology, USA

Abstract

This chapter shows how crucial aspects of organizational knowledge and organizational inquiry can be exactified using a relatively small number of abstract concepts common to various areas of human endeavor, such as (exact) philosophy, business management, science, and technology. Abstraction and exactification are essential for taming complexity in general and complexity of the modern-day organization in particular. Exactification is achieved, first and foremost, by creating and using ontologies—business and organizational domain models with precisely defined semantics. An ontology clearly demonstrates the fundamental concepts of a domain and relationships between them. The semantics of generic concepts used in effective modeling is based on mathematics and philosophy, while in too many cases a multitude of concepts invented in buzzword-compliant IT methods has no clear semantics and therefore
cannot be reasonably used. Organizational learning and organizational inquiry can be understood and accomplished substantially better in the well-defined contexts of the domain ontologies that provide a foundation of organizational knowledge.

Searching for Knowledge

Aristotle’s (2004) *Metaphysics* begins with the sentence: “All men by nature desire to know.” More recently, Mario Bunge (2003) noted that inquiry is search for knowledge and that it is the trademark of science and the humanities. Similarly, inquiring organizations may be viewed as inquiring systems, that is, systems whose actions result in the creation of knowledge (Courtney, Croasdell & Paradice, 1998). Bunge observes that inquiry is a particular kind of cognitive process: it starts with some problem found in a given fund of knowledge, employs definite means, and aims at finding some thing or idea that may solve the problem. As noted by Bunge (1983a),

> “Every human inquiry process involves some explicit or tacit epistemological principles. Some of these are regulative, i.e. they guide (or misguide) the planning and execution of inquiry by inspiring problems, methods, hypotheses, or inferences—as well as by suggesting the doubting or rejecting of alternatives, and searching for new principles.”

(p. 267)

A fair number of descriptive and regulative principles of inquiry is described in Bunge (1983a, pp. 264-270). Thus, inquiry is the composite in a composition of at least six items elucidated by Bunge: a set of inquirers, an incomplete fund of knowledge, a set of problems (gaps in that fund), a set of research tools (conceptual or material), a set of epistemological principles, and a set of goals (cognitive or practical); the emergent properties of this composite include knowledge creation and organizational learning. This applies to any inquiries—be they in pure science, applied science, or technology. Moreover, the practice of critical rationality, free from any institutional affiliations “assumes a metalanguage in which truth claims can be rationally judged by all” (Deary, 2003). We are adopting these points of view in this chapter.

Although many in the fields of technology and management misperceive philosophy as antipractice, negative, irrelevant, and so forth, in reality, “all factual sciences, whether natural, social, or mixed, share a number of philosophical concepts…and a number of philosophical principles” (Bunge, 2001a, p. 45). This was recognized in the curricula of (at least) the early universities. Moreover, technologists (and technology managers!) who work on general theories of systems, control theory, optimization theory, the design of algorithms or simulation are applied philosophers of sorts, since they use philosophical concepts, such as those of event and system, and philosophical principles, such as those of the existence and lawfulness of the external world. (Bunge, 2001b, p. 360).

Of course, both business analysts as generalists who work on analyzing systems and (information) system designers belong to this esteemed class of people. In the same manner as, according to Aristotle, man reaches wisdom by asking the question Why?—