Internal and Consulting Information Flows in the Process of Knowledge Accumulation

William Acar, Kent State University, Kent, USA
Rami al-Gharaibeh, Jordan University of Science & Technology, Irbid, Jordan

ABSTRACT

Practical applications of knowledge management are hindered by a lack of linkage between the accepted data-information-knowledge hierarchy with using pragmatic approaches. Specifically, the authors seek to clarify the use of the tacit-explicit dichotomy with a deductive synthesis of complementary concepts. The authors review appropriate segments of the KM/OL literature with an emphasis on the SECI model of Nonaka and Takeuchi. Looking beyond equating the sharing of knowledge with mere socialization, the authors deduce from more recent developments a knowledge creation, nurturing and control framework. Based on a cyclic and upward-spiraling data-information-knowledge structure, the authors’ proposed model affords top managers and their consultants opportunities for capturing, debating and storing richer information – as well as monitoring their progress and controlling their learning process.

KEYWORDS

Information Flows, KM/OL, Knowledge Accumulation, Knowledge Control, Knowledge Creation, Knowledge Nurturing, Knowledge Representation

INTRODUCTION

The field of knowledge management and organizational learning (KM/OL) has moved, past establishing its relevance to business (e.g., Levinthal & March, 1993), to addressing the challenge of joining of business and social networks with Big Data. Yet, in spite of an abundant and vibrant literature, many of the challenges of balancing richness with control of equivocality surmised by Daft and Lengel (1986) remain. The conceptual challenges before us are being further complicated by the Internet having become a network of devices or “things”, not just initially data bits or informational elements (e.g., Jennex, 2017). And KM/OL has still to resolve its central philosophical and psychological paradox: do organizations themselves learn or is it just their human members who do – and should we account for the two modes (Felin & Hesterly, 2007)? Impeding the work of decision makers, information officers and consultants, some perennial puzzlements also remain. Among them: How does information arise from data (“small”, usual or “big”) disseminated in a variety of separate units, usually located in different divisions and at different levels? Also: What makes discrete informational elements gel into a coherent body of additive knowledge?

Despite the abundant KM literature, these three issues are still marred by confusion. Well documented case studies (e.g., Ravishankar, Pan & Leidner, 2011) continue resolving empirical questions through exacting inductive research. However, as argued by Cabantous and Gond (2011), not all issues are of an empirical nature; theory building requires that room also be made for synthetic deductive conceptualizations. The KM literature is currently mature enough for synthesizing efforts

DOI: 10.4018/IJKM.2019010102

Copyright © 2019, IGI Global. Copying or distributing in print or electronic forms without written permission of IGI Global is prohibited.
harking back to its deductive conceptual foundations (e.g., Ackoff, 1962). Our intent is to contribute synthetic deductions from the field’s premises and literature to complement Nonaka and Takeuchi’s (1995) extant theory of knowledge creation as mostly a conversion of tacit into explicit forms.

We will propose a knowledge-creation framework deductively based on the simple hierarchical structure referred to as the “data-information-knowledge (DIK) hierarchy” (e.g., Acar, Iverson & Al-Gharaibeh, 2015). Data are simple facts (e.g., Braganza, 2004) that are observable, measurable or calculable (Firestone & McElroy, 2003), but interpretable on their own only in rare and fortunate circumstances. When such facts are structured and given a contextual meaning, they become information. Organizations continuously examine their environmental information, attempting to make sense of it. Only by successful comprehension of the environment-embedded meanings can organizations create beneficial business knowledge.

These basic considerations offer a foundation on which to build. We will propose a knowledge-creation framework deductively based on the classic DIK hierarchy (Acar, Iverson & al-Gharaibeh, 2015). Organizations gain beneficial knowledge as long as they successfully collect the right data, generate meaningful information and perceptively interpret the information. The proposed framework thus comprises cycling or spiraling virtuously between two phases. The learning phase ascends from data collection to information generation and, finally, to knowledge acquisition. To extend learning and continue applying the acquired knowledge to fruitful areas (such as product innovation, effective marketing, perception of potential opportunities, etc.), in a second phase the acquired knowledge must be controlled (including being adapted to specific uses).

To solidify this emerging conceptualization, we start by examining its foundations. In the next section, we recall the four modes of knowledge conversion developed by Nonaka and Takeuchi (1995), noting areas of conceptual ambiguity. We are led to proposing a complementary knowledge creation framework based on the well-developed literature of sense making and knowledge representation. In a following section, we develop an argument for extending the current 3-level knowledge hierarchy to a six-level learning process.

In a later section, we will present two papers in which the authors suggest reversing the data-information-knowledge hierarchy. We show that this conceptual reversal entails, in effect, cycling through a second phase, one aiming at the guidance and control of learning. While the initial learning phase depends on sense making, its complementing nurturing control phase would rely on knowledge representation. In Figure 3 we put the two phases together, proposing a practical framework for knowledge creation. Stressing the importance of the concept of rich information being generated in both phases, our final section expands the framework into a model of organizational learning and knowledge creation in strategic management.

BACKGROUND: CREATING KNOWLEDGE AND SHARING IT

The Centrality of Knowledge Sharing

In the latter part of the 20th century, KM researchers generally believed that knowledge sharing would lead to knowledge creation (e.g., Chua & Ngee, 2001; Gorela & Biloslavo, 2017). Based on this belief, Nonaka and Takeuchi (1995) proposed a model comprising four conversion modes that would pragmatically describe knowledge creation within individuals and organizations. Their “SECI” model was widely accepted, based on their tacit-explicit dichotomous view that only part of knowledge is convertible and shareable in explicit forms, and the remaining tacit knowledge can only be shared through socialization. Their insight is that cooperation among workers becomes a major concern in knowledge-based organizations. A major concern for top executives is thus being able to persuade the firm’s experts to share some of their expertise with their group members or apprentices (Chalkiti, 2012).
RDF and OWL
www.igi-global.com/chapter/rdf-owl/25175?camid=4v1a