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Developing actionable knowledge on value crafting: A design science approach

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ABSTRACT

Management scholars are increasingly interested in design science. The design science perspective may help bridge the practice–academia divide by developing actionable knowledge that is grounded in evidence. An eclectic approach to design science in this article serves to develop an intervention tool for crafting work using organizational values, called value crafting. First, several ways to implement the notion of design science are explored. A combination of these design science approaches is subsequently used in a value crafting project in a multinational corporation going through an international merger. In this project, a series of studies serves to iteratively develop an intervention tool for value crafting. Finally, the key contributions of our study to the design science literature are discussed.

1. Introduction

Management scholars are increasingly interested in the notion of design science, especially in the context of the practice–academia divide and the need to develop actionable knowledge that is grounded in evidence (e.g., Bate, 2007; Jelinek, Romme, & Boland, 2008; Hodgkinson & Rousseau, 2009; Rousseau, 2012). Simon (1969/1996) pioneered the notion of organization and management research as a design science (DS). A key purpose of combining "design" and "science" is to produce artifacts in ways that scholars test in practice as well as ground in scientific evidence (Van Aken, 2004).

This article draws on a project in which the authors develop an intervention tool for value crafting (VC). This project uses a DS approach to develop both instrumental and descriptive knowledge (Romme, 2003; Romme & Endenburg, 2006). This approach combines three different perspectives on DS: the regulative and reflective cycle (Van Aken, Berends, & Van der Bij, 2007), realist synthesis of research outcomes (Denyer, Tranfield, & Van Aken, 2008; Pawson, 2002), and C–K theory (Hatchuel & Weil, 2009). This article applies and integrates these perspectives in an iterative approach toward developing a VC intervention tool.

Value crafting provides an interesting opportunity to develop knowledge that is both actionable and research-based. VC draws on organizational values to make short-term and long-term changes in organizational work (Holloway, van Eijnatten, & van Loon, 2011). Thus, the following key research question is addressed: how can a DS approach be used to develop an intervention tool for value crafting? In this respect, our study contributes to bridging the practice–academia divide by creating an iterative DS approach in which theory guides and informs applied work, and vice versa. Throughout this article, a number of key terms are abbreviated as follows: design science (DS), value crafting (VC), regulative and reflective (R&R) cycle, and contexts–interventions–mechanisms–outcomes (CIMO).

The article is structured as follows. The following section outlines the eclectic approach to DS used in this article. The third section presents the context of the problem and research methods adopted in this article and the three studies that inform the design and development of the VC intervention. The fourth section outlines the results, and the final section discusses implications for future research.

2. An eclectic approach to design research

In the design science literature, three perspectives are instrumental in capturing the iteration of academic research and practical relevance. This section outines these three perspectives.

2.1. Regulative and reflective cycle

Organizational design and development activities draw on both instrumental and descriptive knowledge. The so-called regulative and reflective (R&R) cycles facilitate the development of both kinds of knowledge. The regulative cycle was first proposed by Van Strien (1997) to structure the processes by which researchers can solve problems in a systematic way (e.g., design and plan the intervention). The reflective cycle serves to facilitate developmental learning throughout and after the project, so that the resulting knowledge can also be applied

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to "a new project dealing with the same type of problem" (Van Aken et al., 2007: 37).

2.2. Research synthesis (CIMO)

Designing effective solutions in the area of work and management to a large extent depends on how well findings arising from different stages of the research and development process are synthesized. Synthesis involves "making a design for a solution for the field problem" (Van Aken, 2007: 73). Pawson (2002 and 2006) proposes a realist synthesis approach that seeks to test theoretical ideas on intervention–outcome relations, to learn how interventions work in various contexts.

Denyer et al. (2008) propose a so-called CIMO format (or logic for realist synthesis). CIMO involves the synthesis of research findings into problematic contexts (C) of interventions (I) that, by activating generative mechanisms (M), are likely to produce certain patterns of outcomes (O). The context includes the environmental setting and characteristics of those who can influence change; aspects such as experience, competency, power, uncertainty, organizational infrastructure and system interdependencies fall into this category (Denyer et al., 2008; Pawson & Tilley, 1997 and 2001; Rousseau, 2001). An intervention is any action made with the intention to accomplish particular outcomes. In general, these contexts affect interventions and their outcomes. Generative mechanisms are the basic theoretical mechanisms that explain why interventions generate particular outcomes; examples of generative mechanisms are intrinsic motivation, escalating commitment, social pressure, and social capital. Outcomes refer to the results or consequences of an intervention in its various aspects, such as in the area of knowledge transfer, knowledge sharing, performance improvement, or low error rates (Denyer et al., 2008).

2.3. C–K theory

Knowledge discovery and development processes are highly iterative in nature (Kerssens-Van Drongelen, 2001). In this respect, C–K theory provides a "unified design theory" (Hatchuel & Weil, 2009: 181) that draws on a concept space and a knowledge space. As such, it gives way for creative iterations without sacrificing scientific integrity, providing an approach "where creative thinking and innovation are not external to design theory but are part of its central core" (Hatchuel & Weil, 2003). The knowledge (K) space contains the existing and established knowledge perceived to be valid, whereas the concept (C) space contains ideas and hunches that are either unknown or have not yet been firmly established. Partitioning propositions into these two spaces serves to map the design and specification of solutions: the K–C operator is between the existing and initial concepts; the C–C operator is about restructuring the initial (raw) concept into a more developed one; the C–K and K–K operators involve discovery and deduction processes. These operators serve to make the knowledge development process more transparent (Hatchuel & Weil, 2009).

2.4. Integration

In developing a model and intervention tool for crafting work using organizational values, we combined the three perspectives on DS previously outlined. C–K theory provides the overall framework/structure of our research strategy. C–K theory provides a design process plan, and serves to develop and refine the concepts and knowledge used in the VC project. The regulative and reflective cycles were used to design a strategy for value crafting by using distilled knowledge within a field experiment. The CIMO format here serves to synthesize research findings toward a tool, in the form of a testable prototype.

3. The value crafting project

The VC project was conducted in a manufacturing corporation, referred to here as the International Production Company (IPC). In 2008, the European Union granted approval for a merger and acquisition process of multiple companies, resulting in IPC. The merger resulted in a substantial increase in the number of subsidiaries and offices, some of which had highly different cultures and values. IPC therefore started developing a common organizational culture across all subsidiaries and offices. A key element of this cultural transformation was a model and tool for VC, to be used in the post-merger integration process. The remainder of this section outlines the research questions and methods adopted in each of the studies contributing to the development of the VC tool (for more details see Holloway, 2014).

3.1. First study: crafting work

Work crafting involves four important crafting domains: intentions, behaviors, roles, and values. The need for crafting work arises from the employees' need to: assert control over their jobs; create a positive self-image; fulfill the need for connecting with others; and feel part of an ever changing work environment (Wrzesniewski & Dutton, 2001). The research question in this first study therefore was: How does the crafting of work translate into four domains of development (i.e., intentions, behaviors, roles, and values) in individuals and groups? As such, work crafting pertains to how individuals shape their cultural embeddedness at work, that is, their internalization of rules, norms and values. Crafting work can thus lead to a collaborative work environment "in which employees are able to develop their personal resources through learning processes and by translating already existing resources to other valuable assets" (Kira, van Eijnatten, & Balkin, 2010: 619).

The present study includes collecting data in two control teams and inviting one experimental team to participate in a work crafting intervention. In the latter team, work crafting was implemented with help of a set of hint cards. This set consisted of ten cards, eight of which contained an assignment in the one of the four domains of development (i.e., intentions, behaviors, roles, values) and two cards were left blank. The blank cards were created for participants who wanted to create or share their own ideas. Regarding the other eight cards, each domain was represented in two cards. One of these cards represented an 'a priori' assignment, and the other card depicted 'a posteriori' assignment. The former assignment would be carried out before engaging in it, and the latter assignment was to be carried out directly afterwards (Baehr, 2006).

We used questionnaires, direct observations, and focus-group interviews to collect data, and all sessions were audio and video recorded. Moreover, the regulative–reflective cycle, CIMO format and C–K theory serve to evaluate the methods used, and create a preliminary VC proposition (Holloway, 2014).

3.2. Second study: crafting work using organizational values

VC extends the broader notion of work crafting by focusing on *value use*, a specific developmental mechanism (i.e., translation and transcendence) in which an organizational value is used to facilitate learning and development in intentions, behaviors, social roles, and organizational culture. The question in this study was: do VC efforts to change work by way of organizational values influence individual and team development?

This study examined two research and development (R&D) teams at different stages of cultural development, drawing on a longitudinal (t1 and t2) as well as cross-sectional research design. VC was implemented in these teams by means of an intervention in which the team members were instructed in VC and then prompted by a facilitator to follow a four-step process. Data were collected by means of

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