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Routine contraction in good times: An example of a typical prototype development routine

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ABSTRACT

The general wisdom in the routine literature is that routine contraction happens as a response to adverse situation. This study examines routine contraction even during non-adverse situations. Here, routine contraction is operationalized as the shrinkage of resources. The data is hand collected from the public website of the National SCRABBLE® Championship, 2010. Here, each SCRABBLE® routine is an analogy of a prototype development routine. The higher order relationships between SCRABBLE® routines and prototype development routines in a second generation Stage Gate® product development process are mapped following structure mapping theory. The results of panel regressions indicate that the performance of a routine at a particular time (t_0) positively affects contraction of the same routine at an immediately later time (t_1). Efficiency moderates this relationship. Routine contraction may happen even in good times. The paper closes with theoretical contribution and managerial implications of these results.

1. Introduction

Organizational routine is an important area of management that was promoted mainly since the 1980s (e.g. Nelson & Winter, 1982). Its application and use in new product development has rapidly increased (Benner, 2009). Organizational routines are at the heart of all organizations. Organizations learn by doing the same routine activities. A central debate in the organizational routines literature is on: Are organizational routines stable or changing? Under what conditions do organizational routines change? Under what conditions are organizational routines stable? What types of change (e.g. expansion and shrinkage) of organizational routines occur? As a response to this debate, Winter (1964) suggests that an organizational routine is a "pattern of behavior that is followed repeatedly, but is subject to change if conditions change" (p. 263). Several empirical studies found that routines are not inert and typically change over time (e.g. Feldman, 2000, 2003; Narduzzo, Rocco, & Warglien, 2000).

Routine replication and routine imitation involve change in routine. Extensive theory has been developed in these areas (e.g., Winter, Szulanski, Ringov, & Jensen, 2012). Routine contraction (i.e., shrinkage) also involves change in routine (Becker, 2004). However, theory development of routine contraction is in a nascent stage (Anand, Gray, & Siemsen, 2012). The present study is an effort to contribute to this gap. Here, routine shrinkage is operationalized by shrinkage of resources used in the routine. This study shows that routine contraction can happen in good times. This perspective extends the current wisdom in the literature that routine contraction is a "mandatory response to failure" (Nelson & Winter, 1982, p. 122).

This study uses an empirical context of the National SCRABBLE® Championship, 2010. Here, each step in each game of this championship is a SCRABBLE® routine. Each SCRABBLE® routine is an analogy for a prototype development routine in a second generation Stage-Gate® product development process. Panel regression results indicate that improved performance of a routine at a particular time (t_0) leads to increased routine contraction at an immediately later time (t_1). The results also show that the efficiency of a routine negatively moderates the relationship between the performance of a routine at time t_0 and its contraction at time t_1. These suggest that routine contraction may happen even in good times. These empirical findings indicate that managers need not panic when organizational routines contract.

In the rest of this paper, we discuss about the theoretical background and hypothesis development. This includes the existing literature on routines and their modification with special focus on routine contraction. Next, we describe about the source context: a typical SCRABBLE® routine and the target context: a typical prototype development routine. Using structure mapping theory (Gentner, 1983), we then map the higher order relations in the source context to the target context (i.e. a typical prototype development routine). Next, we empirically test the hypotheses and discuss about the findings. At the end, we conclude by discussing the key contributions of this study and identify some limitations.

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2. Theoretical background

2.1. Routines and their modification

Different schools of routine scholars define routines differently (Becker, 2005). The first school defines routines as recurrent behavior patterns (Nelson & Winter, 1982; Winter, 1964). The second school defines routines as rules and standard operating procedures (Cohen, 1991; Cyert & March, 1963). However, an entity cannot be appraised fully by what the entity does. If we just include observations to judge an entity, then an entity would cease to exist when it interrupts its characteristic activity. Think of a firm with working hours between 9 am and 5 pm when a number of routines are energized. When the firm is inactive, the routines do not disappear and the same routines do not mysteriously reappear at 9 am the next day. Hence, routines are dispositions to carry out repeated similar behavior in specific situations (Hodgson & Knudsen, 2010, p. 79) rather than observed behavior. For example, a SCRABBLE® player has a disposition to carry out the SCRABBLE® routine at all times. However, the player carries out the routine observably only when there is a SCRABBLE® board in front of the player. This paper focuses on the dispositional characteristic of routines. Though routines are relatively stable over time, they do change sometimes (Feldman, 2003). Routine contraction is a type of routine change. A routine contraction may involve shrinkage in resources allocated to the routine. This paper examines routine contraction in the context of a SCRABBLE® routine. The choice of SCRABBLE® routine is explained in the next section.

2.2. The source context: SCRABBLE® routine

SCRABBLE® is different from most other tournament games because everything related to the game including the tournaments are strictly controlled by Hasbro Inc., the company that manufactures the game and has the rights to the game in North America. Here, each game of SCRABBLE® includes a collection of routines. Each step in each SCRABBLE® game is a routine irrespective of whether it is played by player A or B. In a SCRABBLE® routine (Fig. 1), a player contracts the routine by using fewer resources even when there is a bonus of fifty points for using all allocated resources.

A SCRABBLE® routine has the key characteristics of a routine. It is guided by a twenty-five-page rule book, called The SCRABBLE® Players Handbook. The performance here is recurrent because every time a player finishes her turn, the second player starts his turn. Overall, a SCRABBLE® routine lies somewhere in between the two extremes of: mindfulness and mindlessness. In such a routine, some sub-routines are automatic, such as, “start clock”, “draw or replenish tiles”, “fill or manage rack”, and “stop clock” (Fig. 1). Some other sub-routines, such as, “form word”, “compute and note score” and “track tiles” involve mindfulness. The key sub-routine: “form word” is guided by cognitive mechanisms that are not fully automatic (Becker & Knudsen, 2005). The more skilled a player is, the more automatically is this key sub-routine carried out. This is because skilled players (especially the top two hundred and fifty players in North America) spend hours in learning wordlists and training for tournaments. The following anecdote indicates the quasi-automatic nature of a SCRABBLE® routine. “ …the most seasoned players don't concern themselves with word meanings. … I recall the time that Brian Cappelletto appeared on the Today Show after winning the 1998 Nationals. Katie Couric asked him for a word without vowels. He gave her CWM (a steep-walled basin). She asked, ‘What does that mean?’ He sheepishly responded, ‘I don't know.’” (McCarthy, 2008, p. 127). A SCRABBLE® routine is a process that is composed of several connected sub-routines. Here, a subroutine is defined as an intermediate part of a routine that acts as a building block (Pentland & Rueter, 1994, p. 490). A typical routine is dependent on the context of the developed board. It is path-dependent because earlier performances build the board situation and thereby, affects its subsequent performances. A SCRABBLE® routine is a disposition to act or think in regular patterns in particular situations where the players store representations (Cohen et al., 1996; Narduzzo et al., 2000) of the word lists, the board situation and their relations in their minds. The players then act quasi-automatically based on these representations (Akgun, Keskin, & Byrne, 2012; Becker & Knudsen, 2005).

The following two characteristics of a typical SCRABBLE® routine are infrequently discussed in the organizational routines literature – (1) competitive behavior; and (2) performance by an actor. The first characteristic - competitive behavior is observed in routines in non-organizational contexts, such as, games, warfare, and soccer (Egidi in Cohen et al., 1996) and in organizational contexts, such as, a budget routine in a large housing department in a public university (Feldman, 2003). The second characteristic - performance by an actor can happen in some routines. Consider an accounting routine in a start-up firm. It may now be done by an accountant. But, when the accountant is on leave, any of the founders performs the same accounting routine. The disposition to carry out the accounting routine in a patterned way is what makes it a routine. In sync with this line of thought, Pentland (1992) studied routines performed by individual technical support staff. Though a typical SCRABBLE® routine is performed by an actor, the initial sub-routines, such as, “start clock”, “draw or replenish tiles”, and “fill or manage rack” could well have been performed by different actors. However, in any variation of such a typical routine that involves a word challenge, an additional sub-routine: “settle challenge” is performed by an unbiased third person, usually a tournament official. Now that we have discussed the source context in the analogy, in the next section we discuss the target context in the analogy.

2.3. The target context: Prototype development routine

Prototype development is a part of a new product development process. A new product development process is “a formal blueprint, roadmap, template or thought process for driving a new product project from the idea stage through to market launch and beyond” (Cooper, 1994, p. 3). There are many parts of the new product development process that are fairly routinized (Adler, Mandelbaum, Nguyen, & Schwerer, 1995). For example - IBM's “red book” new product scheme includes detailed procedure in eleven loose-leaf binders (Cooper, 1994). In this study, in order to provide a context for the focal prototype development routine, we briefly describe a second generation Stage-

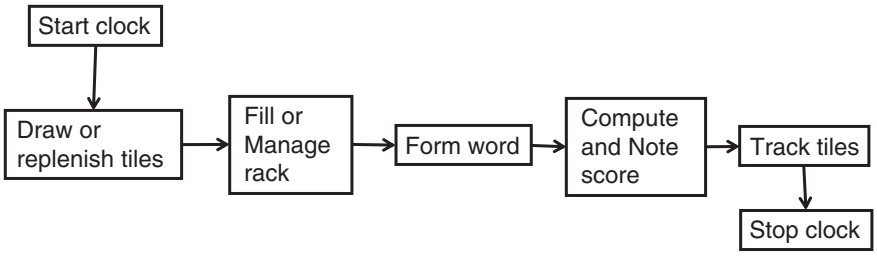

Fig. 1. A typical SCRABBLE® routine.