Threshold Concept for Promoting Business Transformation

By Yayoi Hirose

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Abstract- This qualitative study highlights the importance of considering the threshold concept for promoting the business transformation of large-sized enterprises. The wide range of business literature and experts has debated how traditional large-sized companies can transform conventional approaches and mindset to be competitive. For example, many global enterprises now focus on digital transformation (DX), aiming to disrupt their conventional routines and adopt new DX knowledge and approaches. The literature on leadership identifies how a business leader should behave for their staff to transform their conventional approach, including promoting crisis awareness, setting up a clear strategy vision, and creating a DX department. However, without considering how to transform employees' conventional way of thinking at the individual level, a leader's action will be a unilateral announcement, and the company cannot promote company-wide transformation.

In order to get a clue for promoting the recent DX of large-sized traditional companies, this study is based on the past successful cases of two Japanese large-sized conservative companies that completed company-wide transformation and improved corporate business performance from financial haemorrhage in just a few years.

Keywords: threshold concept, leadership, business transformation, business knowledge.

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In order to get a clue for promoting the recent DX of large-sized traditional companies, this study is based on the past successful cases of two Japanese large-sized conservative companies that completed company-wide transformation and improved corporate business performance from financial haemorrhage in just a few years. The study suggests that, in order to promote corporate transformation, company leaders need to consider how their staff members and middle-managers overcome the threshold concept to learn transformative business knowledge at the individual level, instead of simply promoting crisis awareness and presenting a company goal. The study reveals the usefulness of the threshold concept for understanding transformative business knowledge, as it offers the ability to imagine a successful business scene by disrupting the conventional cognitive frame and adopting new values and approaches. The two cases suggest that by imagining a successful business scene, the employees were able to understand their concrete goal, learn transformative business knowledge, make huge efforts to attain their concrete goal, and ultimately improve their business performance. After overcoming the threshold concept, the employees, through a team effort, actively created their own business knowledge for transformation. This study thus suggests that business leaders who aim to promote DX in traditional companies should consider how company staff and middle-managers will be able to overcome the threshold concept for understanding transformative business knowledge.

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I. Introduction

Nowadays, many global enterprises aim to implement transformational projects. For example, they focus on how to implement DX systems, as DX is necessary for many enterprises to survive severe global competition (Rogers, 2016; Wade, 2019). They expect DX to transform and deepen their relationship with their stakeholders – such as customers, suppliers, and employees – by leveraging advanced digital technologies, including artificial intelligence and robotics, for their competitive advantage (Wade et al., 2019). In order to promote DX, it is necessary to transform employees' mindsets from a conventional approach, disrupting their conventional way of thinking and creating new business (Rogers, 2016; Wade, 2019). This study aims to discuss the usefulness of threshold concept to transform employees' mindsets from a conventional way of thinking.

In many global companies, the CEO has taken the leadership role in implementing a transformational system. As for DX, the CEO announces a clear strategy vision, which includes the message of why DX is necessary, organizes the DX department, and assigns the chief digital officer (CDO). The DX department is required to frequently communicate with business departments under the CDO's initiative to implement the DX system to transform their conventional operations and practices and launch a new business (Rogers, 2016; Wade et al., 2019). The leadership literature claims that a business leader who aims to transform a conventional organization should enable his/her staff and middle-managers to understand the necessity of disrupting the conventional approach and present them with a new business direction (Heifetz et al., 2009; Rogers, 2016).

However, companies that implement transformative business knowledge – including how to conduct a new strategic vision and make profit through the new projects – have not necessarily successfully transformed their organizations. Based on Gartner survey, although 87 per cent of senior business leaders state digitalization is a company priority, only 40% of organizations have brought digital initiatives to scale. Various studies from academics, business consultants, and analysts indicate that 70 to 95% of DX fail (Bonnet, 2022). While most organisations are doing digital projects, this does not mean they are a digital

business. This means that a business leader needs to consider another factor in order to implement business knowledge. This study emphasizes the overcoming of the threshold concept as a successful factor to understand transformative business knowledge. In order to transform a company, organizational people need to disrupt their conventional ways of thinking and implement a new approach. However, as large-sized firms struggle with bureaucratic structures that sap initiative, they tend to maintain a conventional way of thinking; it is hard for them to understand new transformative business knowledge (Hamel & Zanini, 2018). This study discusses two key questions. First, what are threshold concepts to understand transformative business knowledge? Second, how can an organizational leader generate new business knowledge by collaborating with various stakeholders through an understanding of the threshold concept?

II. LITERATURE REVIEW

a) Leadership for Transformation

Past literature on leadership describes how a business leader should promote transformation. Heifetz et al. (2009) emphasizes that an executive leader should present the threat by continuing conventional business and evaluating challenges for adapting to a new environment. Kotter (1996) identifies the importance of promoting staff's crisis awareness, organizing collabora-tive teams for transformation, presenting a strategic vision, and encouraging staff initiative. The DX literature claims the importance of clarifying a strategic vision and organizing a new division for transformation (Rogers, 2016; Wade, 2019). Mintzberg (2004) stresses that a leader should first reflect on him/herself and frequently communicate with his/her front-line staff to take effective action for transformation.

Although this literature on leadership for transformation focuses on how a business leader ought to be and what a business leader should do (Heifetz, 2009; Hughes, 2016; Kotter, 1996; McKnight, 2013; Mitzberg, 2004; Rogers, 2016; Wade, 2019), it does not discuss how employees can transform their way of thinking or how they understand transformative business knowledge to the degree of actualizing the knowledge from an employee perspective. The leadership literature identifies the importance of communication with staff (Mintzberg, 2004), but it does not discuss what a business leader should consider in their communication with staff members to promote their understanding.

b) The Threshold Concept

The threshold concept was more developed in the field of school education rather than business solution (Barradell, 2013; Meyer & Land, 2003, 2005, 2006). Past discussion on threshold concepts focuses on how learners understand more complex knowledge that is not accessible to a novice, such as using a statistical lens to understand statistics (Beitelmal, et. al., 2022; Luoma, 2006; Meyer & Land, 2005). The discussion mainly addresses students learning technical, mathematical, and business material rather than learning organizational knowledge generated in a different cultural values (Bajada &Taylor, 2016; Chrispin, 2016; Hoatly, 2016).

The literature emphasizes that threshold concepts have five characteristics. They are gateway functions that prove troublesome for the learner to integrate with what they already know but, once learned, they are both transformative and irreversible. 'Transformative' refers to a complete and radical change in a learner's understanding, interpretation, and view of a phenomenon, topic, and/or practice (Meyer & Land, 2003; Meyer & Land, 2005). Threshold concepts completely alter the learner's view of the world and their way of thinking and behaving (Meyer & Land, 2005; Trafford, 2008). They change a learner's internal mental structures with respect to the way they perceive and interact with external reality (Yip & Raelin, 2011). This suggests that threshold concept can be helpful for employees who have conducted their business based on conventional approach to transform their way of thinking.

The concept is also irreversible. Once a learner has deeply embedded knowledge into their mindset, it is hard to unlearn because the conceptual framework used to interpret experiences has been reconfigured as a result of a novel integration of new thinking that applies to many phenomena (Davies & Mangan 2007; Meyer & Land, 2005). A threshold concept is also integrative in that it makes sense of and combines past knowledge through a different logic so that a learner can relate factors that have been previously hidden or separated (Meyer & Land, 2005). In this way, a threshold concept can enable learners to grasp and re-interpret the implications of previously tacit assumptions. Davies and Mangan (2007) argue that a threshold concept integrates past dimensions in complex ways by trans-forming conventional perception so that a learner cannot unlearn. When applying it to transformative business knowledge, it is important for employees to understand the threshold concept, as they are required to deal with tacit assumptions that they have already obtained.

Another characteristic of a threshold concept is that it acts as a gateway. It can be a portal or a step progression that enables a person to understand more complex knowledge that is inaccessible to a novice (Luoma, 2006; Meyer & Land, 2005). For example, Beitelmal, et. al (2022) argues that when a learner aims to understand statistics, he needs to have a statistical lens rather than a mathematical one; otherwise, the statistical concepts will not make sense. When an organizational leader aims to promote a transformational

project, he/she needs to consider the gateway function, because they are novices in the field of transformation.

Finally, a threshold concept is troublesome because learners are being offered knowledge but cannot intuitively understand what it means in experience; it feels uncomfortable because it contradicts what they are familiar with and, at the initial stage, there is no sense of how to relate it to what they do know well (Meyer & Land, 2005; Perkins, 2006). Basically, it looks unfamiliar and alien, generating feelings of anxiety or tension as learners wrestle with the complexity of how to integrate it with knowledge that has worked well for them up until now (Cousins, 2006; McCormick, 2008; Perkins, 1999; Yip & Raelin, 2011). While the previous four points refer to cognitive dimensions, this difficulty is most connected to the emotional dimension of learning. Lucas and Mladenovic (2007) discuss how to make students understand new knowledge in pedagogical practice. They stress that a teacher needs to address the fundamental principles or assumptions for students to transform their conventional framework (Lucasa & Mladenovic, 2007). Students' preconceptions of new knowledge can be a barrier; for example, they tend to avoid understanding statistics because they think they cannot understand mathematics. Therefore, they first feel it to be troublesome before they even reach the gateway for understanding statistical knowledge (Lucas & Mladenovic, 2007). When learners think the concept is troublesome, they present emotions such as fear, concern for rejection, anxiety, tension, resentment, and worry (Lucas & Mladenovic, 2007).

Based on McKinsey survey, one of the serious reasons that make transformation fail is employee resistance. For organizational people, it is troublesome to transform their worldviews by challenging prior knowledge and information, as their organizational cultural context affects the recognition of business knowledge (Carlile, 2004). Nahavandi (2016) claims that a mindset that recognizes and accepts many cultures can be a threshold concept for management and leadership. He identifies the significance of self-assessment, reflection, and experience regarding global diversity to understand their own culture and the diversity of other cultures. However, although recognition of cultural diversity can be an important factor in understanding global management, organizational people will not intend to transform their mindsets to learn a new approach, as it is uncomfortable for the staff who have followed conservative norms and rules, and they do not recognize its necessity and value for improving their organizational performance (Hirose, 2022; Khoja & Maranville, 2010; Todorova & Durisin, 2007). Thus, it is necessary to explore another threshold concept to understand transformative business knowledge.

For employees who have been involved with conventional values and approaches for a long time, understanding the threshold concept can be effective for understanding transformative business knowledge. This is because, in order to promote organizational transformation, the learners (i.e., the employees) need to disrupt their conventional knowledge, completely transform their way of thinking, and create their own new business knowledge that integrates with the knowledge that has worked well for them up until now (Kotter, 1996; Heifetsz, 2009; Wade, 2019). Thus, a business leader needs to provide a gateway function for transformative business knowledge from an employee's perspective.

III. Case Study

This study discusses the threshold concept for Japanese business people to understand transformative business knowledge. In order to promote the recent DX, analysis on the past transformation projects can be helpful because transformation of employees' mindset is one of the most important factors for any types of transformation projects. It examines two traditional companies, Hitachi, Ltd. and Japan Air Lines (JAL), which showed a heavy deficit starting with the Lehman Shock in 2008. Hitachi, Ltd. recorded the largest deficit of Japanese manufacturing companies in 2009, and JAL filed for bankruptcy protection in January 2010. The business leaders of both companies implemented transformation projects and successfully turned business around within a short period (Inamori, 2015; Kawamura, 2015; Koitabashi, 2014). Table 1 summarized the two cases.

Table 1: Transformation of the Two Cases

	Number of employees before the transformation	Year of foundation	Circumstances	Goal of the transformation project (in terms of employees' mindset)
Japan Air Line	Around 47,600	1951	Filed for bankruptcy protection in January 2010	Impress the importance of making a profit and customer first principle
Hitachi	Around 330,000	1920	Recorded the largest deficit of Japanese manufacturing companies in 2009	Impress the importance of making a profit for each small unit of business.

The reason this study examines Japanese traditional companies is because the norms and routines of Japanese companies are completely opposite of the direction in which transformation projects develop. Generally, Japanese traditional companies are based on conservative values, and their cultural values do not require clear goal setting which the leadership literature requires (Davis & Ikeno, 2002; Hirose, 2022). Historically, Japanese companies have struggled with disrupting conventional bureaucratic culture in order to be competitive. Business experts refer to *big company disease*: bureaucratic structures do not consider their customers and are unable to create new ideas because they have conventional and fixed ways of thinking (Tateishi, 2008). As Japanese traditional companies have been based on a bureaucratic seniority system, it takes a long time to make a decision, resulting in missed business opportunities (Kawamura, 2015; Parkinson, 1962, Tateishi, 2008; Yutani, 2008).

Although many Japanese business journals and books have criticized Japanese bureaucratic systems, including those of JAL and Hitachi, Ltd., it is hard for organizational people in Japanese companies to understand transformative business knowledge (Kaneko, 2017; Kawamura, 2015; Ogasawara, 2016). Both Hitachi, Ltd. and JAL are said to be successful cases of overcoming big company disease and implementing transformational business knowledge (Kaneko, 2017; Kawamura, 2015). There are various books and documents regarding how Hitachi, Ltd. and JAL successfully transformed, including statements by the CEOs at the time, middle managers, and staff members (Inamori, 2013; Kaneko, 2017; Kawamura, 2015; Shinko, 2020)

Many global enterprises are still struggling with transforming their conventional business thinking. Business departments resist transforming their conventional operations and practices. For example, in many companies, only one or two departments implement a DX system on a trial basis now, and the CEO cannot decide to launch a new DX business at the level of the entire company. Under these circumstances, the companies need an approach that enables the promotion of a transformational project. Such an approach requires organizational people to understand transformative business knowledge.

IV. Findings

The cases of Hitachi, Ltd. and JAL suggest that the threshold concept for understanding transformational business knowledge can be "the ability to imagine a successful business scene by disrupting the conventional cognitive frame and adopting new values and approaches". Organizational people tend to take actions based on their cognitive frames, which have been collectively generated in their organizations (Kaplan, 2008; Witt, 1998). As a result, in long-established organizations, many employees who have simply followed the conventional approach tend to focus on working based on conventional values (Tateishi, 2008). This is because following conventional norms and operations have made their business successful and their evaluations high. For example, the ex-CEO of JAL, Mr. Inamori (2015, p. 114), described the organizational situation when he became CEO in 2010: 'JAL staff did not recognize that JAL went bankruptcy as the airline continued regular operation even after JAL filed for bankruptcy protection'.

The ex-CEO of Hitachi Ltd., Mr. Kawamura (2015, pp. 89–90), referenced the difficulty of transforming employees' business when their business performance was going well: 'Even if I explain, "Because overseas companies become competitive, we will not be able to compete with them," the employees claim "we should not withdraw from this business because our business go well"'. He suggested that employees had difficulty in imagining the threat of a well-performing mature business being surpassed by new entrants. He stated that this is the most difficult issue when he aims to transform a company (Kawamura, 2015).

Past literature on leadership claims the importance of presenting the threat in continuing conventional business and evaluating challenging spirits for adapting to a new environment (Kotter, 1996; Wade, 2016). However, the two cases suggest that a leader unilaterally promoting crisis awareness does not necessarily mean that the employees can clearly imagine the urgent situation. Kaplan (2008) argues for the process of transforming cognitive frames through collective actions. However, organizational people who are used to conventional frames have a hard time understanding why it is necessary. They cannot understand why they need to disrupt their present approach. If they think they can still be successful using their conventional approach rather than a new one, they will not be able to disrupt the present business approach because they do not understand why they need to disrupt it and because it is stressful for business people to negate a successful way of thinking that had worked up to that point (Heifetz et al., 2009)

Marton et al. (2000) distinguish learning knowledge related to context from surface learning, where external knowledge is simply acquired and memorized, and the capacity to repeat what is known to others. In order to learn knowledge generated from a different value, learners need to understand the meaning of that knowledge in relation to their context, change their perspective of the world, and, as a result, change or transform the self (Marton et al., 2000). Thus, it is important to argue for the threshold concept, which considers how learners change their view of the world and their way of thinking (Meyer & Land, 2005; Trafford, 2008). Considering this situation, Mr. Inamori (2013)

raised the awareness of employees by continuously and directly talking to them about deeply recognizing that JAL went into bankruptcy, reflecting on the reason, and addressing the reform.

The ability to imagine a successful business scene includes entrepreneurial imaginings about the business to be conducted and how to conduct it (Witt, 1998). For example, Mr. Kawamura stated:

When I became a president of Hitachi company, I required the business unit leaders to set a benchmark, their competitors and present counteracts to their competitors. That is, they were required to explain their plan regarding how to increase their sales, such as the amount of increase in facility investment. Previously, the only executive management team members explain the company performance. So it was like a somebody's else's problem at that time. After I became a president, they were required to present their future successful business scene based on their concrete business data. Since then, they had a different look in their eyes and some business unit leader asked staff members to check the price of even small equipment. (Kawamura, 2016, pp. 52–53)

Mr. Inamori also claimed the importance of a concrete goal (Inamori, 2013; Shinko, 2020).

Since we belonged to private company, we were required to make decision based on concrete data on our business performance. However, our staff rarely presented concrete data and they just presented very rough figure on our business a few months ago. Furthermore, it was not clear who own responsibility for what business. (Inamori, 2013, pp. 114).

He also required the employees and middle-managers to have a sense of ownership over their business, set a concrete goal, and make efforts to achieve the goal, no matter how the business environment changed (Inamori, 2013).

These successful cases suggest that organizational members should have a concrete image about their business performance. For successful business, organizational staff need to collectively share entrepreneurial business concepts rather than conventional business procedures and routines (Witt, 1998). Inamori (2012) claimed that JAL needed to change from bureaucratic norms and values to customer-first values and Amoeba management. Inamori created the Amoeba management system, in which small financially independent branches take responsibility for making their business profit. By implementing Amoeba management, the staff clearly imagined their goals and what they should improve in order to successfully achieve this goal (Shinko, 2020).

Through the reforms, JAL's middle managers' eyes sparkled and generated a sense of unity among the staff: 'We should have learned how we should act as a leader for customer-first and profit-oriented business much earlier to prevent JAL's bankruptcy. I would like to transfer this knowledge to my staff' (Inamori, 2013, p. 115).

The two cases illustrate how, when a leader focuses on carefully transferring the transformation's successful business image, the staff will be able to understand the image and take the transformative actions that the leader expects. For example, JAL middle managers collectively and actively created JAL's norms and business approach based on the successful image and shared them among all staff members (Inamori, 2013). The reason that new business knowledge was created was that most of the middle managers clearly understood their goal, so they were able to collectively create an approach for how to achieve this goal. As a result, JAL transformed into a customer-first company and in 2012 recorded a 17% profit ratio, which is miraculously high in the airline industry. Hitachi, Ltd. also achieved a record net profit in 23 years.

Table 2 summarizes the threshold concept for the transformative business knowledge of Hitachi, Ltd. and JAL and the business knowledge for transformation collectively created by employees and middle managers when the companies recovered from huge deficits.

Table 2: Threshold Concept and New Business Knowledge in Japanese Cases

	Transformative business knowledge	Threshold concept: The ability to imagine a successful business scene	New business knowledge collectively created by the middle managers and staff members
Hitachi, Ltd.	How to conduct a new strategic vision and make profit through the new transformative projects to reach the goal	Understand the goal, a concrete figure of profit at the business unit level	Report on business performance based on the new strategic discipline by each business unit
JAL	How to conduct a new strategic vision and make profit through the new transformative projects to reach the goal	Understand the goal, (1) a concrete figure of profit at the level of small independent branches and (2) customer-first service, which is highly evaluated	The 'JAL philosophy' regarding customer engagement and business strategy

V. Discussion, Conclusion, and Limitation

This study highlights the importance of considering the threshold concept in the context of past discussions on business leadership, which emphasize the steps and actions a business leader should take from the viewpoint of a C-level leader. The fact that Over 70% of DX fail indicates that A leader unilaterally promoting crisis awareness does not necessarily mean that the employees can clearly imagine the urgent situation. While past literature on leadership tends to emphasize what actions a C-level business leader should take, this study presents the importance of considering employees' and middle managers' perspectives and promoting their understanding new business knowledge in corporate-wide transformative projects. By analysing the two cases of the past transformation project, this study presents the effectiveness of adopting threshold concept for transforming employees' mindset.

While the past discussions on threshold concept mainly focus on school education, this study contribute to extend the discussion to practical business projects. In order to promote transformation, a business leader needs to consider the individual level of employees and middle managers in overcoming the impediment to understanding transformative business knowledge. The findings show that employees who have belonged to large-sized traditional organizations have a hard time understanding transformative business knowledge, as they are used to bureaucratic organizational rules and norms. The threshold concept for business transformation can be the ability to imagine their successful business scene through transformation. Employees need to understand successful business scene, which can be their company's goal of the transformation, in detail. The study shows by understanding the threshold concept, they mastered how to conduct CEO's new business vision and make profit. By becoming able to collaborate with colleagues who similarly overcome the challenge and share the same understanding, middle managers and employees will be able to generate their own highly feasible business knowledge that supports their business transformation.

When business leaders aim to promote DX, they need to define a successful business scene more clearly. In the two cases of this study, where the purposes were to recover from the huge deficit, the successful business scene was easy to be imagined for employees based on a concrete profit figure. However, the DX goal can be more conceptual and not simply to achieve short-term profit, as DX strategy is related to company-wide long-term platform strategy (Rogers, 2016). This is the limitation of this study. Thus, further research is expected to clarifying threshold concept for employees' understanding of DX strategy

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