

THE INNOVATION PROCESS AND TACIT KNOWLEDGE

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Abstract

Business organizations are continually seeking solutions to fulfill their objectives, and innovation stands as an essential tool in resolving these challenges. Integral to this innovative journey is the role of tacit knowledge (López-Nicolás & Meroño-Cerdán, 2011). Those engaged in the process of innovation inherently utilize their tacit knowledge, aiming to solve issues through an unobserved cognitive process (Okuyama, 2017).

This study takes its foundation from the knowledge creation theory (Nonaka, 1994), striving to uncover the interconnection between tacit knowledge and the process of innovation. A qualitative approach, using interviews with individuals involved in organizational innovation, was chosen to gain further insights into mental schematics, human cognition, and theory development concerning the impact of tacit knowledge on problem resolution and the development of unique solutions.

Understanding the relationship between tacit knowledge and innovation at a deeper level can guide managers in recognizing how their team's diverse experiences might influence the organization's focus and innovative pursuits, responding effectively to market fluctuations.

Keywords: Innovation, knowledge management, tacit knowledge, knowledge creation theory.

Introduction

Innovation is intrinsically linked to knowledge, with a strong emphasis on tacit knowledge (López-Nicolás & Meroño-Cerdán, 2011). Existing literature often views tacit knowledge as a unified entity, neglecting the distinction between its two key components: cognitive and technical aspects. The cognitive facet encompasses beliefs, viewpoints, mental models, and values, while the technical aspect pertains to skills and practical knowledge (Nonaka, 1994; Nonaka & Takeuchi, 1995; Whyte & Classen, 2012; Mohajan, 2016). The exploration of the relationship between tacit knowledge and the innovation process in the research literature has been limited.

Managers' comprehension of this relationship is crucial as they rely on their team members to generate creative ideas, ideas that are shaped by their tacit knowledge (Yadav et al., 2007).

Literature Review

In the dynamic and fiercely competitive markets of today, organizations are pivoting towards knowledge management and innovation to stay competitive. The acquisition, preservation, and dissemination of knowledge have emerged as pivotal elements in an organization's survival

(Zack, 1999; Lam, 2000). Innovation is knowledge-centric and relies heavily on tacit knowledge.

Knowledge and the Organization

Knowledge management has become a significant discussion point in contemporary organizational strategies (Nonaka, 1994; Kreiner, 2002). The processes of acquiring, storing, sharing, integrating, and applying knowledge are fundamental to maintaining a sustainable competitive edge (Zack, 1999; Lam, 2000). Managers lean on the collective knowledge and expertise of their employees for strategic planning (Dayan et al., 2017). They often favor individuals with hands-on experience over those with academic qualifications or inherent intelligence, as the practical wisdom gained over time tends to prove its worth (Davenport & Prusak, 1998).

Tacit and Explicit Knowledge

Tacit versus Explicit Knowledge: A Detailed Examination

Within the sphere of knowledge management, perhaps the construct that garners the most attention is the binary between tacit and explicit knowledge. Tacit knowledge, according to definitions by Lam (2000) and Nonaka and Takeuchi (1995), among others, is personal and presents a challenge when trying to convey it to others in a significant manner. On the other hand, explicit knowledge, being codifiable, is readily available to individuals beyond its originator.

Expressing explicit knowledge often takes the form of raw data, scientific equations, specific language frameworks, and instructional guides. By contrast, tacit knowledge is intricately woven into actions, practices, routines, commitments, ideals, values, and feelings, according to Nonaka et al. (2000). Some studies have indicated that these notions do not oppose but rather complement each other. The application and assimilation of tacit knowledge often require the bolstering effect of explicit knowledge, and vice versa (Anu & Eerikäinen, 2010).

The inception of tacit knowledge as a concept can be traced back to Polanyi (1966), who encapsulated its core idea as "We know more than we can tell." Acquiring tacit knowledge often necessitates direct, hands-on encounters (Nonaka, 1994) or practical expertise, termed "know-how" (Koskinen & Vanharanta, 2002). Tacit knowledge is highly individualistic, possessing subjective elements that might pose challenges when communicating it (Lam, 2000), and it often lies in the unconscious or subconscious domain of an individual (Leonard & Sensiper, 1998).

Tacit knowledge encompasses a wide range of aspects, from problem-solving intuition and proficiency with tools to subjective insights and intuition (Nonaka & Takeuchi, 1995). Additionally, it also includes elements tied to the cultural milieu, such as values, beliefs, ideals, attitudes (Mohajan, 2016). The construction of tacit knowledge often involves processes of learning and doing, under the guidance of mentors and colleagues, and its edifice is built on the bedrock of personal experiences of setbacks, evolving ideas, misunderstandings, and rectifications (Puusa & Eerikäinen, 2010).

Utilization of tacit knowledge often finds itself in the realm of problem-solving (Leonard & Sensiper, 1998; Koskinen & Vanharanta, 2002), where professionals rely on mental models shaped by experience to decipher and rectify organizational challenges. Tacit knowledge also plays a crucial role in problem framing, where the process of innovative problem-solving often entails discarding apparent assumptions or solutions, reframing the issue from fresh perspectives, or proposing novel questions, thereby paving the way to innovative solutions. Tacit knowledge also proves instrumental in the fields of anticipation and prediction, key components of the innovation process (Leonard & Sensiper, 1998).

Tacit knowledge is inherently context-specific (Nonaka et al., 2000) and varies from one organization to another, since it is embedded in the routines, processes (Zack, 1999), values, commitments, ideals, and emotional fabric of an organization (Nonaka & Von Krogh, 2009). Given that it evolves over time, tacit knowledge possesses a unique characteristic that makes it challenging to replicate (Zack, 1999). Recent studies have begun to underscore the importance of tacit knowledge and its role in enhancing an organization's competitive edge (Beesley & Cooper, 2008).

Tacit knowledge is characterized by two aspects: one being technical, embodied in crafts, skills and informal practices (Mohajan, 2016), and the other cognitive, which includes individualized mental models, beliefs, perceptions of the future and reality (Nonaka, 1994; Nonaka & Takeuchi, 1995; Whyte & Classen, 2012; Mohajan, 2016). The cognitive facet further involves intuition, acquired perspectives and values drawn from personal experiences (Mohajan, 2016). This cognitive aspect defines individuals' reality interpretation and visions of the future, allowing their mental models to foster "perspectives" that enable them to interpret and understand their environment (Nonaka, 1994). Collins (2010) drew from Polanyi's research to categorize tacit knowledge into three types: relational, which can be explicitly expressed via social interaction, somatic, rooted in our bodies and brains, and collective, which resides within individuals and groups (Mohajan, 2016).

Sharing tacit knowledge may present a challenge, but it is by no means an insurmountable task. There exist numerous vehicles for its dissemination, including the sharing of stories (Venkitachalam & Busch, 2012), interviews (Whyte & Classen, 2012), focus groups (Johannessen, et al., 1999), metaphors, illustrations, and other forms of expression that don't strictly adhere to linguistic rules (du Plessis, 2007). Stories, especially those that reflect personal experiences, play a pivotal role in conveying tacit knowledge (Whyte & Classen, 2012), with individuals benefiting from understanding their roles and assimilating the organization's culture through these narratives (Peet, 2012).

2.3 The Knowledge Creation Theory

Nonaka (1994) unveiled the knowledge creation theory, featuring the Spiral Model of knowledge conversion. The act of organizational knowledge creation is defined as amplifying and making accessible the knowledge produced by individuals, and subsequently crystallizing and incorporating it into the organization's knowledge system (Nonaka & Von Krogh, 2009;

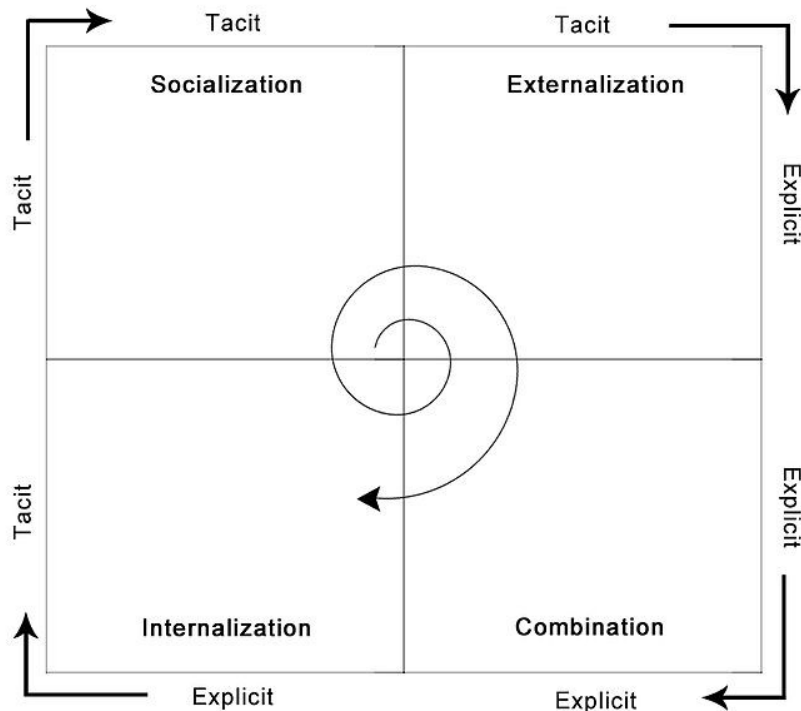
Nonaka et al., 2006, p. 1179). It falls within the organization's realm of responsibility to generate, disseminate, and integrate this fresh knowledge into its existing systems and procedures (Nonaka & Takeuchi, 1995).

The process of organizational knowledge creation begins with the exchange of tacit knowledge among organization members with the intention of conceptualizing a new service or product. This exchange encompasses tacit knowledge about consumer expectations, required skills, emerging technologies, and the sharing of beliefs, personal experiences, and thoughts which contribute to the inception of innovative concepts or products (Von Krogh et al., 2000). The knowledge crafted within the organization holds exceptional value, given its tacit nature, uniqueness, specificity to the organization, and the difficulty in its replication by competitors (Zack, 1999).

Transition of Tacit Knowledge to Explicit Knowledge

The relationship between tacit and explicit knowledge plays a pivotal role in the creation of novel knowledge. The proficiency of an organization to innovate is largely based on its capacity to effectively manage the interface between tacit and explicit knowledge (Nonaka & Takeuchi, 1995; Lam, 2000). For tacit knowledge to be shared or communicated within an organization, it must be transformed into explicit knowledge, a process that proves challenging to execute in a systematic or logical manner (Nonaka & Takeuchi, 1995).

The Spiral Model elucidates diverse patterns of interaction between tacit and explicit knowledge (Nonaka, 1994). This model, constructed on the dynamic interplay of four distinct conversion methods (Nonaka & Toyama, 2003), encapsulates socialization, externalization, combination, and internalization - collectively referred to as SECI:

Figure 1 Nonaka and Takeuchi Knowledge Spiral Model (1995)

Spiral Model Socialization encapsulates the process of transferring tacit knowledge from one person to another through interpersonal interactions (Nonaka, 1994), such as mentorship or collaboration within a shared workspace. This process may also incorporate hands-on experiences, including the establishment of routines, developed through prolonged interaction (Nonaka & Toyama, 2003; Nonaka et al., 2006).

The transformation of tacit knowledge into explicit knowledge is referred to as **Externalization** (Nonaka, 1994). During this process, knowledge is solidified and disseminated among individuals, thereby forming the foundation of new knowledge (Nonaka, Toyama, & Konno, 2000). Metaphors serve as essential tools in this process (Nonaka et al., 2006), alongside analogies and models. The conceptualization of a novel product or service is a prime example of externalization (Nonaka et al., 2000).

Combination involves transmuting an individual's explicit knowledge into another's explicit knowledge by merging their distinct explicit knowledge. This process is facilitated through meetings, telephone communications (Nonaka, 1994), digital networks, databases, and other forms of systematized explicit knowledge (Nonaka & Toyama, 2003). The procedure of aggregating, sorting, blending, and categorizing knowledge will invariably lead to the generation of novel knowledge (Nonaka, 1994; Nonaka et al., 2006).

Internalization represents the stage of transmuting explicit knowledge into tacit knowledge, where “action” assumes a pivotal role (Nonaka, 1994). Other elements that contribute to this process include practical experiences, self-reflection, document reviews, experimentation, and simulations (Nonaka & Toyama, 2003; Nonaka et al., 2006).

Erden et al. (2008) suggest that tacit knowledge significantly influences the success of innovation endeavors. However, tacit knowledge does not originate from a single individual but is an accumulation of knowledge derived from groups and teams. For complex tasks such as problem-solving and innovation to be successfully addressed, individuals must blend their knowledge. This necessitates cooperative and coordinated efforts devoid of explicit communication rules or procedures. The concept of group tacit knowledge relies on a team of individuals possessing diverse abilities, strengths, and weaknesses, who, despite these differences, collaboratively work towards problem-solving and achieving a consensus on the optimal course of action for a given situation (Erden et al., 2008).

Innovation

Innovation is often described as a process by which an original idea, activity, or object is conceptualized and manifested," according to Robertson (1967, p. 14). A frequent interpretation of innovation is the introduction of novel value to the clientele through modifications in products, procedures, commercial strategies, or marketing techniques (Madrigal-Sanchez & Quesada-Pineda, 2012). Drucker (1998) portrayed innovation as: "The distinctive role of entrepreneurship, irrespective of whether it is within an existing business, a public service institution, or a startup initiated by a single individual from their home. It is the vehicle through which the entrepreneur either generates novel wealth-creating resources or upgrades the existing resources with improved potential for wealth generation," (p. 3). Innovation signifies the endeavor of instigating deliberate and concentrated changes in an organization's social or economic potential and understanding (Drucker, 1998).

Origins of innovation can encompass: (1) feedback from clientele acquired either through direct interaction with customers or through alternative data collection methods; (2) creativity amongst employees leading to the inception of new concepts; and (3) research facilities and organizations offering similar services (Madrigal-Sanchez & Quesada-Pineda, 2012).

Knowledge, particularly tacit knowledge, is a crucial source of innovation (Drucker, 1998). This type of knowledge can metamorphose into goods, services, or processes, fostering creative thinking and innovative developments (López-Nicolás and Merono-Cerdan, 2011).

Tacit knowledge encompasses the experiential expertise of individuals. When faced with problem-solving situations, people draw from their knowledge, derived from prior experiences. The depth of their knowledge and the skillsets they possess considerably influence their problem-solving aptitudes (Koskinen & Vanharanta, 2002). The significance of tacit knowledge in innovation stems from its dependency on experiential learning and the challenges it poses for competitors to replicate. Organizations with extensive tacit knowledge are likely to exhibit superior innovative capacities (Cavusgil et al., 2003). Research indicates that the influence of tacit knowledge on organizational profitability, through product innovation, is more pronounced than that of explicit knowledge (Lopez-Cabarcos et al., 2020). Thus, sharing tacit knowledge plays an instrumental role in the innovation process and is a significant determinant of successful innovation (Seidler-de Alwis, & Hartmann, 2008).

Nonaka and Takeuchi (1995) proposed the fundamental concept of envisioning innovation as a cyclical interaction between tacit and explicit knowledge, which includes four stages: (1) dissemination of tacit knowledge among members of the organization, (2) exchange of ideas, innovative products, and technology among individuals with varied and complementary backgrounds, (3) knowledge assuming a more explicit form and amalgamation into new products and prototypes, and (4) knowledge reverting to tacit knowledge as the production process attains efficiency (Nonaka & Takeuchi, 1995).

The innovation process necessitates the effective management of three distinct types of tacit knowledge: overlapping tacit knowledge, collective tacit knowledge, and guiding tacit knowledge. The first type, overlapping tacit knowledge, manifests when groups are formed, and each individual contributes their unique knowledge, hence representing a portion of their tacit knowledge. Collective tacit knowledge emerges from sustained interaction among group members over time. Guiding tacit knowledge refers to the knowledge that is not explicitly articulated but conveyed through visions, symbols, or logos. Its primary aim is to strengthen individuals' alignment during the course of the innovation process (Leonard & Sensiper, 1998).

In every stage of innovation, tacit knowledge operates as an instrumental force, particularly prominent during the phases of idea inception and generation. Such knowledge accelerates the innovation process, leading to successful innovation outcomes. The incorporation of tacit knowledge in innovation necessitates the recognition of relevant tacit knowledge by individuals. This recognition is typically achieved through interpersonal communication, during which ideas are introduced, debated, and refined in the context of defining challenges, devising solutions, and applying mental models and patterns (Seidler-de Alwis & Hartmann, 2008).

Literature Review Gaps

The concept of tacit knowledge, primarily derived from Polanyi's (1966) seminal work, is often characterized as inextricable from action and incommunicable (Mohajan, 2016). Additionally, the work of Nonaka (1994) and Nonaka et al., (1995, 1998, 2000, 2003, 2006, 2009) to information sharing and the SECI model of knowledge conversion have influenced the discussion of knowledge creation theory. The majority of research has, up to this point, concentrated on the mechanisms and effects of tacit knowledge sharing within organizations, including the use of tools, suitable sharing environments, barriers to tacit knowledge sharing, and the resulting effects on organizational performance and innovation.

However, tacit knowledge is frequently discussed as a single entity without making a distinction between its cognitive and technological forms. The first refers to ideas, viewpoints, opinions, and ideals, while the second is about abilities and knowledge, like riding a bike or using a sewing machine (Nonaka, 1994; Nonaka & Takeuchi, 1995; Whyte & Classen, 2012; Mohajan, 2016). Although it is acknowledged that these actions produce tacit knowledge, there is little extant research that specifically addresses how cognitive tacit information is created. Research into the elements influencing the generation of tacit knowledge offers an intriguing new direction.

Research exploring the interplay between tacit knowledge and innovation typically probes the impact of tacit knowledge sharing on organizational innovation, shared mental models, and organizational performance. From a broad perspective, these studies delve into the dissemination of tacit knowledge within organizations, the transmission of this knowledge among individuals, and the significance of such transfers. Numerous studies have examined the various innovation models adopted by different knowledge schools, yet little is known about how tacit knowledge has been leveraged within these models.

The purpose of this study is to address the aforementioned gaps in literature, guided by the following central research question:

What is the relationship between Cognitive tacit knowledge and the innovation process?

Research Methodological Framework and Approach

The methodological layout of this study was architected to pinpoint the association between tacit knowledge and the process of innovation. The goal is to delve into the cognitive workings of the participants and the knowledge they disseminate during the process of innovation.

The methodology is anchored in the narratives relayed by participants about their experiences and the course they navigated to arrive at a novel concept aimed at introducing new products, services, or procedures to their organizations or the broader community.

The Rationale behind this Study

Innovation leans heavily on tacit knowledge, with enhancements in knowledge and methodologies invariably linked to the emergence of new tacit knowledge (Senker, 1995). Tacit knowledge is cultivated through personal experiences and interpersonal exchanges with specialists (Senker, 1995). Mental models, as a form of tacit knowledge, influence how individuals interpret circumstances, comprehend causal links, and decipher the significance of any event's characteristics (Rebernik & Širec, 2007).

Research Design

A qualitative research approach encompassing inductive analysis was adopted, bolstered by the application of thematic research for examining the collected data, yielding descriptive results (Merriam, 2002). Thematic analysis was employed for its flexibility and potential for modification to meet the study's requirements, rendering a detailed yet intricate account of data. This method facilitates a readily understandable form of analysis while capturing the key aspects of extensive data sets. It lends structure to the study, resulting in well-organized and lucid research findings (Nowell et al., 2010). The research involved semi-structured interviews with open-ended questions. Tacit knowledge was identified based on the cognitive dimension definition, comprising views, convictions, sentiments, emotions, and intuitive guesses (Nonaka, 1994; Nonaka & Takeuchi, 1995; Whyte & Classen, 2012; Mohajan, 2016).

Interviews were employed as the principal data collection instrument, with the intent to perceive the research topic from the participants' perspective. Semi-structured interviews were formulated to elicit personal insights from participants about a specific topic or a distinctive situation they had experienced. Participants were urged to select an innovative concept or idea - something new to their organization - and recount the journey that led to its inception.

Furthermore, they were invited to narrate the intricate details of the path taken towards conceptualizing, crafting, and implementing the novel idea (Gabriel & Griffiths, 2004).

The interviews were tailored to emphasize how tacit knowledge played a role in prompting the participant to conceive a certain idea or make a specific decision. They also focused on the participants' personally encountered experiences, or experiences observed around them, which swayed their choice of problems and solutions in the innovation process. The innovation process covered by this research are (1) new idea generation (Van de Ven, 1999; Boer & During, 2001), (2) designing phase (Eveleens, 2010), and (3) the idea implementation phase (Van de Ven, 1999; Boer & During, 2001).

Research Site

The Kingdom of Saudi Arabia, known as the second largest in the Arab world, commands the bulk of the Arabian Peninsula and hosts a population projected to be 35,163,323 million as of 2021 (World Population Review, 2021). For numerous years, the Saudi administration has acknowledged the necessity to diversify its economic resources beyond oil revenue (Alzalabani et al., 2013; Jamali & Lanteri, 2016), instigating concerted efforts to stimulate economic expansion and foster an economy propelled by innovation (Alzalabani et al., 2013). The Vision 2030 initiative of Saudi Arabia, introduced in 2016, laid the groundwork for creating an economy that is not solely dependent on oil, wherein entrepreneurship plays a pivotal role in achieving this ambition (Kataya, 2016).

Data Analysis

The data acquired through interviews were thoroughly examined, encoded, and classified (Gioia, Corley, & Hamilton, 2012) employing the inductive technique to pinpoint themes, discern patterns of action, and comprehend responses (Creed et al., 2010). This was accomplished with the assistance of thematic analysis, enabling the identification of recurring motifs and revealing patterns pertaining to the research inquiry. The accessible and adaptable nature of thematic analysis allowed for an inductive approach, leading to the establishment of codes and themes that organically emerged from the data itself (Braun & Clarke, 2012).

Findings:

The Idea Generating Phase and Tacit Knowledge

The stage idea generating phase refers to the moment within the innovation procedure when a specific idea is birthed (Van de Ven, 1999; Boer & During, 2001). It may represent the incipient spark behind the identification of a unique business proposition, or it may trigger the initiation of a program, product, or service to be rendered by the establishment.

During this stage, we identified several forms of cognitive tacit knowledge that appear to influence the innovation process:

a. Perspectives and Opinions

Perspectives and opinions signify an individual's comprehension of their surroundings. These perceptions form a robust foundation for ideation and interpretation (Nonaka & Takeuchi, 1995; Whyte & Classen, 2012). In the face of specific circumstances or dilemmas, these

viewpoints and assumptions appear to be recalled and operate as the genesis of an idea or a resolution to the problem at hand. This form of tacit knowledge is accumulated over time and can be brought to the fore when the situation demands.

Mo, an interviewee and the originator and CEO of a social initiative focused on youth development, holds the viewpoint that young individuals grapple with self-understanding. He suggests that youth need to fully grasp their self-identity to make informed decisions about their career and future. This understanding, in his view, should commence early in life.

“Without a sound understanding of their own selves, their weaknesses and strengths, their fundamental values, it becomes extremely challenging for them to make these decisions. Hence, we initiated 'our project'. It consists of several modules, each dealing with a unique aspect of a young person's life.”

Mo, while seeking a concept for his business, found this perspective inspiring, leading him to create his social initiative centered on youth development. The initiative offered educational modules for young individuals, each designed to guide them through specific stages of their lives, beginning from high school and extending further.

b. Emotions and Intuitions

Emotions and intuitions also seemingly play a role in the innovation process. An entrepreneur might launch a business proposition based on their feelings towards a problem or issue in their environment. Empathy, particularly the ability to project themselves into similar situations, also impacts idea formation and presentation. Raseel, the founder of a social responsibility organization focused on environmental consciousness, was inspired to start her business due to the distress she felt witnessing litter and irresponsible behavior causing damage to the environment and properties in her city. Her emotional reaction prompted her to take action.

“It deeply distresses me to witness the careless disposal of waste in public spaces. The sight of litter being nonchalantly tossed from car windows is particularly upsetting. I reside near the coastline, and thus the sight of discarded seeds, coupled with the sight of dilapidated swings and slides, truly disheartens me.”

Her profound discomfort towards these actions stems from her belief that our planet is a divine gift, one which deserves our utmost respect and care:

“Environmental concerns are not merely a matter of luxury; they are of fundamental importance. It pains me to witness this blatant disregard for nature's beauty, as it's an affront to the principle that humans, by nature, appreciate beauty. Any action that tarnishes this beauty is an affront to our very existence.”

Feelings of empathy and the ability to see situations from others' perspectives often lead to intuitive insights about their needs. These insights, often unique to the individual, become the foundation for innovative ideas, with the potential to develop into broadly applicable solutions.

c. Beliefs

Beliefs are deeply rooted ideas that individuals hold as truths, generally cultivated over a lifetime and significantly influenced by one's formative years. When confronted with various situations, these beliefs emerge and play a crucial role in generating ideas that contribute to

innovation processes and the formulation of a social enterprise's core values. Beliefs provide significance to specific subjects, guiding individuals towards selecting them as societal issues to address.

Rama, the co-founder of a board games company, held a steadfast belief in the symbiotic relationship between education and enjoyment.

Rama professed, "I hold the conviction that education without an element of amusement is too rigid, but with the inclusion of enjoyment, it becomes significantly more engaging and agreeable." She also perceived the educational methods in her home country as archaic, and expressed the necessity for modern, innovative teaching approaches. This belief was shaped by her personal experiences and her comparison of educational techniques in her home country with those she experienced while studying abroad:

"The form of education I was initially subjected to was rather traditional. However, my time spent studying overseas exposed me to a variety of teaching methodologies, far removed from the rote learning I was accustomed to. These interactive methods not only piqued my interest but also facilitated better absorption of information."

Rooted in these beliefs, Rama sought to integrate education and play, laying the foundation for her educational board game social enterprise. Individuals' beliefs significantly shape their actions and decisions, especially when confronted with specific circumstances or challenges, and strongly influence the selection of societal issues to address.

Cognitive tacit knowledge, manifesting as perspectives, opinions, emotions, intuitive insights, and beliefs, resides within individuals and shapes their perception of the world.

Tacit Knowledge and Its Influence in the Idea designing Stage

a. Attitudes and Standpoints

The formulation stage of innovative processes appears to be significantly influenced by individual attitudes and standpoints. The foundational premise of an idea's structure is often shaped by the designer's interpretations of what they deem to be legitimate from their unique perspective.

Consider Gani, a product designer for a youth development institution. He embarked on the design of a novel product aimed at amplifying communication capabilities. The product took the form of a sharing circle assembly, devised to foster an environment for safe sharing of sentiments and contemplations. Gani opted for "gratitude" as the inaugural discussion theme, given its profound importance for others to comprehend and internalize, particularly in its close ties with religious practices and the sacred fasting period, which incidentally aligned with the product's debut:

"In my view, commencing with gratitude was apt, particularly given the 'Ramadan' - the holy month was underway. It was a fitting time, bearing significant relevance to the religious, cultural, and traditional aspects. Individuals need constant reminders of the importance of

gratitude in their lives, welcoming its frequent presence, which I've come to understand invites greater abundance. All of these considerations connect seamlessly."

The basis for Gani's viewpoint on the necessity of increased gratitude is primarily his personal belief, lacking concrete evidence for support. Furthermore, his design for the subsequent circle theme was predicated on his personal interpretation of happiness:

"My next consideration is about meaningful relationships, primarily because everyone experiences difficulties or possesses a narrative. I believe that the essence of happiness lies in maintaining meaningful interpersonal connections regularly."

Gani's viewpoint suggests that everyone is experiencing personal adversities, or possesses a poignant story affecting their happiness quotient. He deemed the remedy to be nurturing meaningful relationships. This generalized viewpoint served as a projection of others' requirements, guiding his decision to focus the next circle on relationships.

b. Emotions and Intuitions

Individual emotional responses to specific subjects can have a substantial influence on their approaches to surrounding circumstances. These reactions are typically rooted in intuitive beliefs rather than tangible proof. Moreover, empathetic attitudes towards others shape the design of their services and products, as designers' empathetic insights project onto others what they subjectively perceive as suitable.

Consider Rotana, who was crafting a program aimed at empowering young women through improved communication skills. Her program was uniquely designed, deviating significantly from conventional communication training programs. She perceived that typical self-development programs excessively focused on external manifestations such as gestures, postures, and body language. To her, this was insufficient:

"My conviction is that the communication process needs more than external focus, such as how one should physically present during communication. I sought to highlight the internal processes that precede actual communication - the thought processes that dictate our choice of words."

She felt that if the training concentrates on the internal process inside the individual before the actual communication happens, the training will be more beneficial. The design of her self-development program was based on her emotions.

c. Beliefs

Personal convictions or beliefs are composed of ideas and notions that individuals perceive as accurate. Their formation is typically an amalgamation of lifetime encounters, with considerable influence from experiences in childhood. Such convictions, embedded deeply within a person's psyche, emerge during specific circumstances. They attach significance or relevance to a concurrent idea and often galvanize individuals to tackle pressing societal issues.

Consider the case of Dana, an individual dedicated to effecting change in underdeveloped regions and the lives of children. In her younger years, she felt the urge to travel to such areas, personally contributing her efforts to bring about improvement. Nowadays, she is of the

opinion that her business pursuits can aid these children more effectively. Consequently, she has crafted board games that raise awareness about global issues.

She says, “As we age, our thoughts mature. I now hold the belief that I can contribute more effectively to organizations through financial means, rather than being physically present... I am not a healthcare professional, and they are not spectacles for display.”

Such deeply-rooted convictions guide individuals' actions and significantly impact the design of their products or services. The resultant designs are often a reflection of the creator's beliefs and aim to achieve specific objectives.

Influence of Tacit Knowledge and Focus during the Idea Implementation Phase

Our data analysis didn't demonstrate a direct influence of tacit knowledge during the implementation phase. However, this stage puts the conceptualization and design of an idea to the test. Depending on the outcome, the idea and its design may be updated, revised, or completely reformed. The insights individuals gain from implementing the idea form a new set of tacit knowledge. This newly acquired tacit knowledge provides a framework for resolving the issues encountered.

Discussion and Conclusion

Tacit knowledge occupies a pivotal role in the innovation process (Erden et al., 2008). The cognitive aspect of tacit knowledge often embodies skills, inklings (Polanyi, 1966, p. 2), revelations, intuitive thoughts (Nonaka & Takeuchi, 1995), personal convictions, mental models, and individuals' understanding of reality, future scenarios, and their surroundings (Nonaka & Takeuchi, 1995; Whyte & Classen, 2012). These elements collectively shape unique "perspectives" (Nonaka, 1994). These distinctive perspectives influence individuals' observation of their surroundings and the decisions they make in response to environmental stimuli (Yadav et al., 2007).

Understanding the Role of Cognitive Tacit Knowledge

The distribution of tacit knowledge, while challenging, is far from insurmountable (Nonaka & Von Krogh, 2009). The conduits of this knowledge transfer are interviews and narratives narrated by interviewees, which enable us to decipher the role of tacit knowledge in the innovation journey. Such narratives are rich with emotions, sentiments, passions, empathy, and viewpoints (Gabriel & Griffiths, 2004), and they serve as catalysts to rekindle memories, fostering the articulation of tacit knowledge via externalization (Sakellariou et al., 2017).

Through this narrative collection, we glean insights into the process each interviewee employed to arrive at innovative or fresh ideas and outline their distinct innovation journey. Evident within these tales were elements of cognitive tacit knowledge, manifesting as personal perspectives, convictions, beliefs, emotions, and intuitive insights (Nonaka, 1994; Nonaka & Takeuchi, 1995; Whyte & Classen, 2012; Mohajan, 2016). Such cognitive attributes epitomize individual mental models (Nonaka & Takeuchi, 1995; Whyte & Classen, 2012) and personal perspectives.

The impact of cognitive tacit knowledge on the innovation process is profound, laying the groundwork for determining areas deemed worthy of investment. While perspectives, convictions, beliefs, and hunches might lack concrete evidence, they influence how individuals perceive their surroundings. These individual perceptions can be about any element - issues, objects, events, or other individuals. Such personal perspectives often steer individual actions, with their rationalization rooted in their observation of the world, and over time, these perspectives might consolidate into realities (Nonaka & Von Krogh, 2009). In the creation of a project, service, or idea, this tacit knowledge significantly influences not just the selection of the cause but also the nuances of the offered services or products.

The progression of the narratives unveiled that this tacit knowledge is cultivated over time, shaped by myriad experiences and factors over the years (Nonaka, 1994; Nonaka & Takeuchi, 1995; Whyte & Classen, 2012; Mohajan, 2016). The interpretation of these experiences, being subjective, varies from one person to another, thus underscoring the personal and unique nature of tacit knowledge. Two people might share a common perspective on a topic, but the journey leading to that perspective can be starkly divergent.

Studies suggest that tacit knowledge is more intimately associated with individuals than with groups within an organization, thereby reinforcing its personal and subjective nature (Puusa & Eerikäinen, 2010), a finding that aligns with my observations. This cognitive tacit knowledge often forms the basis for individuals to extrapolate their personal perspectives as universally valid, influencing what is considered important or unimportant, and which endeavors are worth pursuing from a personal standpoint. It is intrinsically linked with individual emotions and passions, contributing to the singularity of the innovation process.

Knowledge Conversion

Through the lens of different themes or events, we witness a process of knowledge metamorphosis. Insights gathered during this research suggest that individual learning, extracted from a variety of encounters, undergoes a transformative process, converting it into tacit knowledge through internalization. For instance, engaging with a specific customer demographic instigates a learning experience, which subsequently gets ingrained as tacit knowledge.

During the innovation journey, or at a requisite moment such as narrative-sharing sessions, this tacit knowledge evolves into explicit knowledge via a process termed as externalization. In the realm of innovation, this internalized tacit knowledge is externalized and disseminated. This dissemination can take the form of direct sharing of viewpoints, convictions, or subjective beliefs. Alternatively, it might manifest within the conception or development of ideas, as underlying intuitions, instincts, and sentiments, and is only unveiled through the underlying narrative.

It is crucial to highlight that the final conception and design formation often correlate with explicit knowledge derived from the related tacit knowledge. The influence of these elements

on the selection of explicit knowledge for usage or investigation becomes evident through the narratives shared by our respondents (Li, et al., 2013).

Conclusion:

A keen understanding of the tacit knowledge possessed by organizational members, its significance, and its implications on innovation is a must-have for organizational leaders. Experienced individuals are favored for recruitment due to the reliance on their expertise in decision-making (Davenport & Prusak, 1998) and their contributions to the innovation trajectory. Nonetheless, we observed a tendency among experts to fixate on a specific thought process, leading to repeated idea generation. This risk of a cyclic conceptual repetition further reinforces the need for understanding how tacit knowledge and past experiences influence the innovation journey. This comprehension might stimulate the establishment of an environment conducive to innovation, promoting the generation of fresh experiences, and fostering an enriched learning process. Such an innovative milieu might also catalyze the innovation process, breaking the pattern of idea repetition among team members.

Organizational leaders bear the onus of facilitating social contexts that propel the process of knowledge creation. They should foster a climate that motivates individuals to participate in innovative ventures, exchange insights, and organize in small teams to facilitate the exchange of social practices and knowledge. Innovation thrives on interactions among individuals with varied social practices, interests, cognitive frameworks, preferences, and unique access to social networks.

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