

Is all knowledge shareable? Does the organization know the knowledge that needs to be shared?

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Abstract

Purpose – The purpose of this paper is to examine the concept of tacit knowledge and analyze the Nonaka's model of knowledge creation to seek answers to the questions:

- 1. Is all knowledge shareable?*
- 2. Does the organization know the knowledge that needs to be shared?*

Design/methodology/approach – The methodology used was an extensive literature review that helped identify and analyze relevant international publications. The literature was categorized in six themes: Tacit knowledge, Knowledge environment, Competitive Organization, Knowledge Management, Type of knowledge and Knowledge sharing. Research limitations/implications – This is a conceptual paper that should contribute to the existing literature by comprehensively reviewing the concept of tacit knowledge in the organization and sharing tacit knowledge within organizational borders based on selected research of literature. Originality/value – This review could be the basis for future researches to deepen the concepts of tacit knowledge sharing within organizational borders, so that managers could use the findings to identify the tacit knowledge that needs to be shared in the organization. Paper type – Conceptual paper.

Keywords: Tacit Knowledge, Knowledge sharing, Competitive Advantage, Competitive Organization

INTRODUCTION

A distinctive competence is a firm's ability to do something better than can its competitors (Andrews, 1987) (Hofer, 1978) (Selznick, 1957). By manufacturing or giving a service in a better way than its competitors, the organizations can gain a competitive advantage and gain market share which will transform it in a more profitable company. According to Argote and Ingram (Argote & Ingram, 2000), the recent trend in the field of strategic management has been to emphasize the role of organizational knowledge as a basis of the competitive advantage of particular organizations. The focus to generate

this competitive advantage should be on resources developed or made valuable inside the organization rather than purchased outside.

We can define knowledge as the ability to act, something that has been learned and that always contains expertise. Therefore, in an organization, knowledge resides in different repositories, consequently it needs to be managed. Since the organizations are developing in a knowledge society, knowledge has turned to be a very important asset of an organization. Peter Druker said in 1994 that we were entering the knowledge society, there is no doubt that 26 years later in 2020, we are now completely emerged in it. The knowledge society it's more than the information society, the knowledge society can be defined as "Information Society and Knowledge" and is the informational and sustainable society (GĂITĂNARU, 2019). Some executives see knowledge as a critical asset that can generate a competitive advantage over their competitors. Therefore, the creation and transfer of knowledge in organizations provide a basis for competitive advantage in firms (Argote & Ingram, 2000).

Knowledge, as a unique and valuable resource, has played a significant role in allowing organizations to improve their competitive advantage (Gao, Li, & Clarke, 2008). In order to achieve and maintain competitiveness and sustainable growth, companies have to constantly create new knowledge and pursue practical wisdom (Nonaka I. , The knowledge-creating company, 1991), (Nonaka, Toyama, & Hirata, Managing flow: A process theory of the knowledge-based firm, 2008).

A company is not a machine but a living organism (Nonaka I. , The Knowledge-Creating Company , 2007), and Tacit knowledge is a blessing because it is hard to imitate by competitors (Coff, Coff, & Eastvold, 2006). Previous studies have established that knowledge sharing strongly promotes corporate entrepreneurship. Consequently, organizations, which aim to leverage current assets to develop new businesses and enter into new markets, should strongly promote knowledge sharing (Ahmad & Karim, 2019).

Knowledge sharing should not only be seen as a way to help colleagues to improve their job performance, but also a strategy for an organization to manage efficiently and effectively difficult aspects of organizational life, such as high turnover of staff, fast evolution of technologies or constant changes in socio-technical environments (Chen, Baptista, An, & Bai, 2016). Are managers aware of the importance of managing their knowledge? Are they aware that to develop a sustainable competitive advantage, organizational employees must share and apply knowledge in practice (Cabrera & Cabrera, A, 2005)?

Sharing Tacit Knowledge allows organizational members to have a common point of reference, which facilitates communication and coordination (Enberg, Lindkvist, & Tell, 2006), (Hong, 2012) (Hadjimichael & Tsoukas, 2019). Having a knowledge management suggest that competitive advantage in this changing modern world can be built around managing, preserving and protecting knowledge assets (Gao, Li, & Clarke, 2008). How do managers establish their knowledge management strategy? Are they aware which are their knowledge assets that need to be shared or protected?

The companies that manage knowledge correctly, have become famous for their ability to respond quickly to customers, create new markets, rapidly develop new products, and dominate emergent technologies (Nonaka I. , The Knowledge-Creating Company , 2007). Therefore, we can agree with Charterina, Basterretxea and Landeta saying that knowledge is widely recognized as a crucial resource for developing competitive advantages (Charterina, Basterretxea, & Landeta, 2017). As a consequence,

we can identify Knowledge Sharing as one of the most important organizational resources that bring many benefits, key outcomes and sustainable competitive advantage for firms (Yao, Yang, Fisher, Ma, & Fang, 2013).

Innovative organization are companies that encourage innovation and share knowledge constantly, after our first literature review, we faced a doubt, if the organizations are developing their corporate strategies, based on the knowledge they are creating? Or are they planning without taking their knowledge assets in consideration? Our literature review showed that knowledge sharing is a voluntary activity that requires time and commitment that will outcome a mature organization that learns from its information.

Therefore, the purpose of this paper is to summarize past research and clarify if the managers are aware of all the knowledge their organization have. It is limited to a literature research, based on our findings via online databases as JSTOR, ACM digital library, EBSCO, Emerald, ProQuest, SAGE, SPRINGER, using keywords as Tacit Knowledge, Knowledge Sharing, Knowledge Transfer, Knowledge Society, Tacit Knowledge, Organizational Awareness and Tacit Knowledge Sharing. Through the information of our research we want to answer the next questions:

1. *Is all knowledge shareable?*
2. *Does the organization know the knowledge that needs to be shared?*

In this study, we define knowledge management as the process to capture, develop and share all the knowledge in an organization, therefore knowledge sharing is an important activity of knowledge management, that is vital to accomplish efficiently the organizational goals.

Methodology

The present literature review followed a combined framework that resulted from the one proposed by Lorenz R. Rhomberg and other authors (Rhomberg, and others, 2013) and Barbara Kitchenham (Kitchenham, 2004) for systematic researches. Consequently, the framework used consists of four main phases: defining the causal questions, develop and apply criteria for review of individual studies, analysis and discussion and define conclusions. At the same time the review protocol includes the following elements: a) inclusions and exclusion criteria, b) search strategy, c) data source, d) study selection, e) data extraction and f) data analysis.

To define the review questions, first the author did a research on available papers on the methods to identify tacit knowledge and how to convert it to explicit knowledge. During this research the author came up with 7 possible questions to review. From these 7 questions the author did another research looking for literature concerning the answers and came up with the 2 questions that had more literature to review and decided to analyze those questions in this paper.

Research methods

The inclusion criteria to select the relevant studies to evaluate consists of four aspects for the selection of the literature to review. First, we include all the studies regarding sharing tacit knowledge. Second, we added literature in relation with knowledge conversion either analyzing whether in the individual aspect or from the organizational point of view. Third, this paper focuses on the individual's tacit knowledge sharing specially viewed in the organizational aspect. Fourth, the period to study will be 2010-2020 and only articles written in English.

The author used 5 search terms: Knowledge Sharing, Tacit Knowledge, Knowledge transfer, Knowledge society, and Knowledge sharing models to find the published papers to be analyzed. Then we added Knowledge sharing enablers, Knowledge sharing strategy and Organizations' awareness tacit knowledge keywords, as a second round to find literature, to have all the organizational aspect covered.

The search terms were used to collect all related studies through a private advanced research site provided by Tecnológico de Monterrey (Tecnologico de Monterrey, 2020) that searches among 130 databases, the author decided to have a filter to just look for Academic journals, so the research would be more accurate, the number of databases was reduced to 25. The databases that returned results that were useful were especially from: JSTOR, ACM digital library, EBSCO, Emerald, Proquest, SAGE and SPRINGER.

The initial search generated as a result more than 70,000 papers just with knowledge sharing as keyword, so the author decided to apply a new filter: Academic Journals AND as content supplier = Business Source Ultimate AND just to research in 7 databases: JSTOR, ACM digital library, EBSCO, Emerald, ProQuest, SAGE and SPRINGER. This way the result was reduced to 1,291 for the keyword knowledge sharing. The author had the results shown in Figure 1 to the 5 initial keywords (Knowledge Sharing, Tacit Knowledge, Knowledge transfer, Knowledge society and Knowledge sharing models) plus 3 new keywords (Knowledge sharing enablers, Knowledge sharing strategy and Organizations' awareness tacit knowledge). At the beginning there were 2,687 studies as a sum of all the results from the different keywords, with the second round of research (Figure 2), the total number was 3,000. After reading the titles and abstracts, therefore removing the duplicated articles and the irrelevant ones to our case study, the sample was reduced to 164 articles. After reading the articles, 117 were excluded because they didn't help to answer our review questions, leaving 47 papers for the literature review. 51 articles were added based on citations in the original papers this made come up with 98 articles for the literature review (Figure 3).

Keyword	Number of articles retrived
Knowledge sharing	852
Tacit knowledge	250
Knowledge transfer	724
Knowledge society	491
Knowledge sharing models	370
	2687

Figure 1 First research results by keywords

Keyword	Number of articles retrived
Knowledge sharing enablers	103
Knowledge sharing strategy	196
organizations' awareness tacit knowledge	14
	313

Figure 2 Results by keyword for the second research

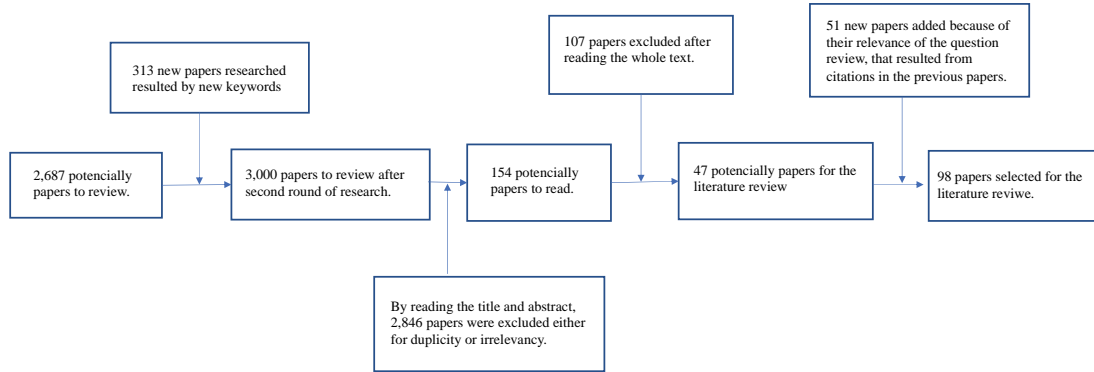


Figure 3 Study process selection

A data extraction system was created to identify possible answers to our questions, identifying what could answer the review questions, and reading the original paper looking to deepen the concept to be able to answer our questions. The extracted data was stored in a excel file making a data repository.

Analysis and Discussion

For the data analysis, the author divided the data in 2 categories, since there weren't any papers that answered the review questions directly. The first category contained data extracted directly from previous papers that impacted the analysis and explanation of the answers to the review questions. These data were systematically analyzed by the technique proposed by Johnson and others (Johnson, Adkins, & Chauvin, 2020). The second category contained information related to the concepts of tacit knowledge, knowledge sharing that could help deepen the possible answers. The process of analyzing systematically the data consisted of 5 steps:

- First, there was the need to familiarize with the data, through reading the papers selected for the review. To deepen the concepts, the source papers cited in papers selected were researched and read to a better understanding of the data and of the main concepts.
- Second, the key concepts were identified, coding first the main concept of the extracted data. The coding process consisted in identifying the main concept of the data.
- Third, after having codified all the papers, they were condensated in one file and read again to generate potential themes to answer the review questions. A method of cluster was used to help generate the themes, according to the main concepts identified.
- Fourth, after reading again and having analyzed the resulted themes, all the extracted data was colored with the color assigned to the corresponding theme. For example, Knowledge sharing, green and Tacit knowledge, blue. The process resulted in the identification of 6 themes. Different kinds of knowledge were identified, as their shareability and the different repositories where it is or could be stored. Also, there were identified possible gaps for future studies.
- Fifth, our analysis revealed different kind of knowledge identified, and their shareability and their stored method described in Table 1. The author generated the conclusions if all tacit knowledge is shareable and if the people in an organization are aware of all the knowledge that needs to be shared, which are described in the conclusion section.

Research findings

The knowledge creation process is a spiral that grows out of three elements : (I) the SECI process, knowledge creation through the conversion of tacit and explicit knowledge; (II) 'ba', the shared context for knowledge creation; and (III) knowledge assets, the inputs, outputs and moderators of the knowledge-creating process (Nonaka, Toyama, & Konno, SECI, Ba and Leadership: a United Model of Dynamic Knowledge Creation , 2000). These 3 elements interact with each other continuously, with the purpose to create new knowledge whether it is individual or collective knowledge (organizational knowledge).

An organization creates knowledge by converting tacit to explicit knowledge and vice versa. Nonaka proposes the SECI model to convert knowledge. The model consist of 4 stages, that are: 1) *Socialization*.- from tacit knowledge to tacit knowledge; 2) *Externalization*.- from tacit knowledge to explicit knowledge; 3) *Combination*.- from explicit knowledge to explicit knowledge; and 4) *Internalization*.- from explicit knowledge to tacit knowledge (Nonaka, Toyama, & Konno, SECI, Ba and Leadership: a United Model of Dynamic Knowledge Creation , 2000).

Focusing in the process of externalization of the SECI model, the process of articulating tacit knowledge into explicit knowledge, we can understand that when tacit knowledge is made explicit, knowledge is crystallized, thus allowing it to be shared by others, and it becomes the basis of new knowledge. Externalization is the process of articulating tacit knowledge into explicit knowledge. When tacit knowledge is made explicit, it allows to be shared by others and it becomes the basis of new knowledge (Nonaka, Toyama, & Konno, SECI, Ba and leadership: a unified model of dynamic knowledge creation, 2000). Therefore, Knowledge sharing is one of the most fundamental activities in organizational operations (Ahmad & Karim, 2019).

The qualitative analysis of the papers permitted to identify 6 themes from the data extracted: Tacit Knowledge, Knowledge environment, Competitive Organization, Knowledge management, Type of knowledge and Knowledge sharing. As shown in Figure 4, most of the distribution of our papers are in 3 themes: Type of knowledge (23%), Competitive Organization (22%) and Knowledge management (21%).

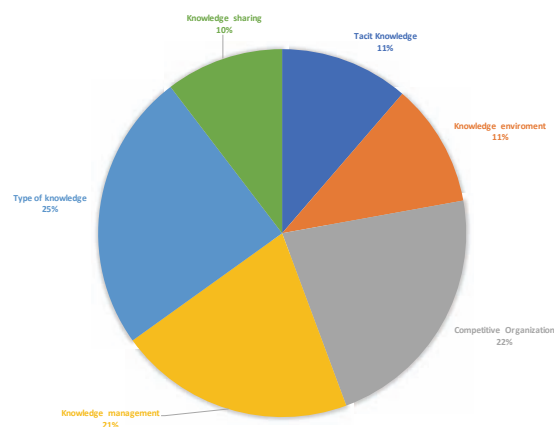


Figure 4 Percentage of papers distribution by themes

Can we share everything we know?

Knowledge is dynamic, since it is created in social interactions amongst individuals and organizations. (Nonaka, Toyama, & Konno, SECI, Ba and leadership: a unified model of dynamic knowledge creation, 2000). Basing on the first review question *Is all knowledge shareable?* The qualitative analysis resulted in different kinds of knowledge among the papers reviewed described in the Table 1. Looking to find where is the knowledge stored and if it can be shared?

Description	Also known as	Stored	Can it be shared or converted?	Author(s)
<p>Tacit Knowledge</p> <p>is the knowledge that cannot be easily expressed, inaccessible to consciousness and tied to action.</p>	<p>Know-how</p> <p>Tacit Knowing</p>	<p>Individuals' mind</p>	<p>Tsoukas argues that knowledge cannot be articulated nor converted into explicit rules.</p> <p>On the other hand, Nonaka established that this knowledge is acquired with little or no direct instruction, it is procedural, and above all, practically useful. Its invisible to the person who has it.</p>	<p>(Fannoun & Kerins, 2019)</p> <p>(Tsoukas, 2011)</p> <p>(Polyani & Prosch, 1975)</p> <p>(Nonaka & Krogh, Tacit Knowledge and Knowledge Conversion, 2009)</p>
<p>Explicit Knowledge</p> <p>is visible knowledge, encoded as manuals, databases, codes of practices, etc.</p>	<p>Know-that</p> <p>Implicit</p> <p>Latent Knowledge</p>	<p>Manuals,</p> <p>Databases,</p> <p>Procedures,</p> <p>Knowledge repositories</p>	<p>Through official documents, methodologies and similar.</p>	<p>(Ismail & Hamzah, 2018)</p> <p>(Yusof, Zakaria, & Zainol, 2016)</p> <p>(Levallet & Chan, 2019)</p> <p>(Nonaka & Krogh, Tacit Knowledge and Knowledge Conversion, 2009)</p> <p>(Huang, Davison, & Gu, 2011)</p>

<p>Individual knowledge</p> <p>is on a person's mind where he or she is aware they have it or not.</p>	<p>Tacit Knowledge</p>	<p>Individual's cognitive schemata</p>	<p>Depends if the individual wants to share it and if the person is conscious that he or she has it.</p>	<p>(Wang, 2019)</p>
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Description	Also known as	Stored	Can it be shared or converted?	Author(s)
<p>Group knowledge</p> <p>is the combination of individual cognitive schemata, acquired through mutual experience.</p>	<p>Collective knowledge</p>	<p>In a collective mind</p>	<p>Some knowledge can be told, some not.</p>	<p>(Hadjimichael & Tsoukas, 2019)</p> <p>(Nonaka & Krogh, Tacit Knowledge and Knowledge Conversion, 2009)</p> <p>(Collins, 2010)</p>
<p>Implicit knowledge</p> <p>is built through social negotiation within the sector and represents the collective understanding of how work is done.</p>	<p>Tacit group knowledge</p>	<p>Collective memory</p>	<p>It can be shared in a master-apprentice pattern. This knowledge has personal and tacit elements where it cannot be fully explicit, it may require the use of different IT tools such as collaboration systems.</p>	<p>(Daghfous, Belkhodja, & C. Angell, 2013)</p> <p>(Levallet & Chan, 2019)</p> <p>(Yang, 2010)</p>
<p>Somatic Knowledge</p> <p>This is skill-based tacit knowledge that is tacit only because it is so complex that human beings can master it only through socialization.</p>	<p>Medium tacit knowledge</p> <p>Practical Knowledge</p>	<p>In individual's mind as body abilities</p>	<p>Through motivations and awareness to engage in continuous individual development depends on cultural knowledge.</p>	<p>(Collins, 2010)</p> <p>(Hadjimichael & Tsoukas, 2019)</p> <p>(Chen, Baptista Nunes, Ragsdell, & An, 2019)</p>

<p>Relational Tacit Knowledge</p> <p>Knowledge that can be told—conveyed with a few words—is deliberately kept hidden. Can be told if only the contingencies would go away.</p>	Concealed Knowledge	Individual's mind	Can be told if only the contingencies would go away.	(Collins, 2010)
<p>Procedural knowledge</p> <p>is specific to each organization within the sector and is related on how things are done in that particular environment and in that specific organizational culture.</p>	Organizational knowledge	Culture organization, rules, ways of transferring knowledge	Through teaching, simulation games.	(Sitzmann, 2011) (Hadjimichael & Tsoukas, 2019) (Chen, Baptista Nunes, Ragsdell, & An, 2019)
Description	Also known as	Stored	Can it be shared or converted?	Author(s)
<p>Experience Knowledge</p> <p>the individual tacit knowledge acquired by the practitioners through their agency in the organization and interaction with peers, managers and customers.</p>	Technical Know	Individual's mind	It is suggested that individuals of the interested parties should spend time with each other, increase geographical proximity is assumed to facilitate the sharing process.	(Kale, Singh, & Perlmutter, 2000) (Hadjimichael & Tsoukas, 2019)
<p>Conscious knowledge</p> <p>Is the individual explicit knowledge that has been codified or can be,</p>	Explicit Knowledge	In mobile devices, computers, printers, etc	Through official documents, methodologies and similar.	(Levallet & Chan, 2019)

and that is available to others in the organization.				
<p>Objectified Knowledge</p> <p>Is the knowledge that has been codified and captured at the social level.</p>	Explicit knowledge	In a Knowledge Transfer Mechanism, that facilitate the storage of objectified knowledge as standard operating procedures and formal collective training sessions.	Through language and diffused across individuals.	<p>(Nonaka & Takeuchi, 1995)</p> <p>(Levallet & Chan, 2019)</p>
<p>Automatic Knowledge</p> <p>Individual habits, habitual steps to perform an activity</p>	Implicit knowledge	Individual's mind	This knowledge is hard to share because it is not codified and is best transferred person-to-person.	(Levallet & Chan, 2019)
<p>Collective knowledge</p> <p>usually implicit and embedded in social norms, organizational cultures, etc.</p>	Group Tacit Knowledge	In a collective mind or organizational memory	Through socialness	<p>(Spender, 1996)</p> <p>(Levallet & Chan, 2019)</p> <p>(Ahmad & Karim, 2019)</p> <p>(Hadjimichael & Tsoukas, 2019)</p>

Description	Also known as	Stored	Can it be shared or converted?	Author(s)
<p>Subsidiary Knowledge</p> <p>is the awareness of performing an activity, is just an instrument to be able to perform the activity.</p>	Transparent knowledge	Individual's mind	Through the performance of the activity	(Tsoukas, 2011)
<p>Phronesis</p> <p>is the factor that promotes the spiraling process; between tacit and explicit knowledge it is the high-quality tacit knowledge acquired from practical experience that enables one to make prudent decisions and take appropriate action to each situation, guided by values and ethics.</p>	<p>Practical wisdom,</p> <p>Prudence,</p> <p>Practical rationality</p>	Individual's mind	Through practical experience and developed shared practices.	(Nonaka, Kodama, & Hirose, Dynamic fractal organizations for promoting knowledge-based transformation, 2014)
<p>Ba</p> <p>shared context means that one can see oneself in relation to others and accept others' views and values.</p>	Latent Mental knowledge	<p>Individual's mind</p> <p>Organizational memory</p>	<p>Through practice, accomplished in interaction.</p> <p>Ethics is something that is learned through observations of others' behavior.</p>	<p>(Dobson, 1999)</p> <p>(Nonaka, Kodama, & Hirose, Dynamic fractal organizations for promoting knowledge-based transformation, 2014)</p> <p>(Nonaka & Toyama, Strategic management as</p>

				distributed practical wisdom (phronesis), 2007)
<p>Organizational Knowledge</p> <p>Amplified knowledge created by individuals and connecting it to the organization's knowledge system.</p>	Collective knowledge	Organizational memory	Through communities of practice (CoP).	<p>(Nonaka & Krogh, Tacit Knowledge and Knowledge Conversion, 2009)</p> <p>(Wang, 2019)</p> <p>(Abu-Shanab, Haddad, & Knight, 2014)</p>

Description	Also known as	Stored	Can it be shared or converted?	Author(s)
<p>Technical Knowledge</p> <p>Practical knowledge from the experts learned through practice.</p>	<p>Technical know-how</p> <p>Knowing that</p>	Individual's mind	Knowledge sharing in a master-apprentice pattern is the most direct and effective way to share implicit knowledge within the organization.	<p>(Nurye, Molla, & Assefa, 2019)</p> <p>(Tsoukas, 2011)</p>
<p>Weak knowledge</p> <p>Is a knowledge that could be converted in explicit depending on the logistics and the way societies are organized.</p>	Personal Tacit knowledge	Individual's mind	With enough effort some part of this knowledge can be converted to explicit.	(Collins, 2010)
<p>Medium knowledge</p> <p>is the individual tacit knowledge that the owner can explicate it.</p>	Somatic Tacit knowledge	Individual's mind	The owner needs to explain this knowledge in order to convert or share it.	(Collins, 2010)
<p>Strong knowledge</p> <p>The owner of this knowledge doesn't know to explicate or make explicit. Is knowledge located in society.</p>	Collective Tacit knowledge	Group memory	No, this knowledge cannot be explained or converted.	(Collins, 2010)
<p>Distributed phronesis</p> <p>Practical wisdom that is distributed and exists at all levels of an organization.</p>	Group Practical wisdom	Individual's mind (Judgement, understanding)	Patterns of action in the organization.	(Nonaka, Kodama, & Hirose, Dynamic fractal organizations for promoting knowledge-based transformation, 2014)

Practical wisdom that results in appropriate action.				
<p>Collective phronesis</p> <p>practical wisdom leaders gather together to develop a new product or process or solve problems.</p>		Collective mind	Shared sense of instructional vision and of ownership of the instructional process.	<p>(Nonaka, Kodama, & Hirose, Dynamic fractal organizations for promoting knowledge-based transformation, 2014)</p> <p>(Halverson & Gomez, 2001)</p>
Description	Also known as	Stored	Can it be shared or converted?	Author(s)
<p>Focal Target</p> <p>is the awareness resulting from subsidiary particulars by the knower.</p>	Focal awareness	Individual's mind	Tacit integration of subsidiary sense perceptions. The focal target does not happen automatically but is a result of the act of the knower.	(Tsoukas, 2011)
<p>Mismatched Saliences</p> <p>Is knowledge that can be told but is kept hidden without it being anyone's intention to hide it.</p>		Individual's mind	Since it is hidden by accident the providers of knowledge welcome close proximity between themselves and learners so that they can learn by every kind of interaction.	(Collins, 2010)

<p>Socialness</p> <p>Is the ability to absorb ways of going on from the surrounding society without being able to articulate the rules in detail.</p>	<p>Knowledge awareness</p>	<p>Individual's ability</p>	<p>Only humans can develop this knowledge and there are many ways to socialized but cannot warranty the conversion.</p>	<p>(Collins, 2010)</p>
<p>Secret knowledge</p> <p>is the essence of Tacit knowledge that cannot be explicated, nor used, unless shared by the people who possess it.</p>	<p>Unrecognized knowledge</p>	<p>Individual's mind</p>	<p>To recognize all currently unrecognized knowledge would involve completing the task of science and understanding every mechanism that controls the material world.</p>	<p>(Tsoukas, 2011)</p> <p>(Collins, 2010)</p>
<p>Mechanical Knowledge</p> <p>is the explicit knowledge coded in robots or devices with machine learning or artificial intelligence.</p>	<p>Explicit knowledge</p>	<p>Devices memory</p>	<p>Following rules</p>	<p>(Tsoukas, 2011)</p> <p>Tacit and Explicit Knowledge</p> <p>(Collins, 2010)</p>

Description	Also known as	Stored	Can it be shared or converted?	Author(s)
<p>Theoretical knowledge</p> <p>Is knowledge that has been taught to be able to realize a task or activity but that has not been put in practice.</p>	Codified knowledge	Manuals, procedures, etc.	Through standard procedures, official documents.	<p>(Tsoukas, 2011)</p> <p>(Pereira Moreira, Graças Viera, & Gomes da Silva, 2015)</p> <p>(Huang, Davison, & Gu, 2011)</p>
<p>Socio-material Practice</p> <p>provides its members with an inarticulate background against which practitioners make focal sense of their particular tasks.</p>	Practice Knowledge	Individual's mind	With socialized in a practice, the members learn how to use the key distinctions.	(Tsoukas, 2011)

Table 1 Different kinds of knowledge

According to Nonaka, Ikujiro and Krog, knowledge loses some of its “tacitness” through the process of externalization. Therefore, we have three clusters of the knowledge developed according to its tacitness or codification. First, Tacit/Implicit/Transparent/Subsidiary, second, Explicit/Latent, and third, Organizational Knowledge. Table 2 shows the three clusters identified during our analysis.

Tacit knowledge	
Individual Knowledge (Personal Knowledge, Weak Knowledge)	Collective Tacit Knowledge (Group Tacit Knowledge, Strong knowledge)
Somatic Knowledge (Medium Knowledge)	Relational Tacit Knowledge (Concealed, Ostensive, Logically Demanding)
Experience Knowledge	Automatic Knowledge
Subsidiary Knowledge	Technical Knowledge

Distributed Phronesis	Focal Target
Mismatched Saliences	Socialness
Secret Knowledge	Social-material Practice
Explicit Knowledge	
Implicit Knowledge	Conscious knowledge
Objectified Knowledge	Mechanical Knowledge
Theoretical Knowledge	
Organizational Knowledge	
Procedural Knowledge	Phronesis
Ba	Collective Phronesis

Table 2 Tacitness clusters

Do we know what we can share?

According to Nonaka, Kodama and Hirose the most important aspect of economics and business studies will be focused on knowledge and the subjective of the humans, who create and utilize knowledge (Nonaka, Kodama, & Hirose, Dynamic fractal organizations for promoting knowledge-based transformation, 2014). Therefore, the importance of knowing what can be knowledge needs to be shared and what knowledge needs to be protected.

There are two different kinds of awareness according to Polanyi and Prosch (Polyani & Prosch, 1975) in exercising a skill, which can be Experience knowledge, Automatic Knowledge, Technical Knowledge or Medium Knowledge. The awareness of performing the task (Focal Target) and the awareness of having the tool or knowledge to perform the task (Subsidiary knowledge). Therefore, Subsidiary Awareness and Focal Awareness are mutually exclusive (Polanyi M. , 1962). On the other hand, we get things done, we achieve competence, by becoming unaware of how we do so (Tsoukas, 2011).

Continuing with this unaware/aware situation, how to know what collective tacit knowledge has been converted and which one hasn't? The key to doing so is continuously challenging employees to reexamine what they take for granted (Yusof, Zakaria, & Zainol, 2016). This needs to become a knowledge sharing strategy in other to achieve a competitive advantage, challenge your employees constantly so new knowledge is created and shared.

Chen, Baptista, An and Bai found in their study that the awareness by practitioners of the benefits associated with knowledge sharing is the key for the success of knowledge sharing. Consequently, the lack of understanding and awareness of the benefits of Knowledge Sharing, revealed very low levels of intrinsic motivation among the employees (Chen, Baptista, An, & Bai, 2016). So, what managers would need to do in order for them to know what needs to be shared?

To improve knowledge-centered culture, the managers should: develop common languages that can support knowledge exchange; encourage employees to experiment and implement new ideas; and treat mistake as an opportunity to learn, and unendingly promote more informal Knowledge Sharing among employees and departments (Lei, Khoi Do, & Ba Le, 2019).

The knowledge sharing strategy should be based on Knowledge Awareness by practitioners, and on business processes, consequently the knowledge management strategy has to be aligned with the business strategy of the organization (Oluikpe, 2012).

Tacit knowledge may be subconscious but is action-oriented and comprises contextual practices. Acquired through socialization, it is about how individuals interact in and interpret their environment (Ismail & Hamzah, 2018). Therefore, externalizing, collecting, storing, sharing and disseminating this very important tacit knowledge is the crucial aspect in Knowledge Management for intensive knowledge companies (Chen, Baptista, Ragsdell, & An, 2019).

Since transferring tacit knowledge is a complicated task, subsidiary managers may decide to codify knowledge and standardize knowledge exchange situations (Mahnke, Pedersen, & Venzin, 2009). The selection of the right knowledge management strategy will improve effectiveness and provide added value to the organization (Andriani, Samadhi, Siswanto, & Suryadi, 2019).

The growth stage and business process characteristics are the variables that need to be considered in determining the knowledge management strategy in order to increase an organization's sustainability (Andriani, Samadhi, Siswanto, & Suryadi, 2019). It is not simply a matter of knowing facts, but knowing which facts are relevant to what situation, and act on that knowledge competently (Dreyfus, 2007). Knowledge Management concerns with the nature and uses of knowledge within organizations (Nonaka & Takeuchi, 1995).

The sources of competitive advantage and organization's success are heavily dependent on how well knowledge is shared between individuals, teams and organizations (Argote, McEvily, & Reagans, 2003). It is also shown that more knowledge sharing is not always better. Knowledge sharing involves costs as well as benefits for all the parties involved. This implies that we need to know much more about the different components of costs and benefits for the parties involved (Mahnke, Pedersen, & Venzin, 2009). Therefore, the importance of developing a correct knowledge strategy based on the core organizational process and the knowledge identified as indispensable to be shared.

Conclusions

As Tsoukas (Tsoukas, 2011) explains Tacit and Explicit Knowledge cannot be separated, and even the most explicit knowledge as documents, manuals and procedures, is based on tacit knowledge. Hence the importance of general managers to identify the tacit knowledge that needs to share. Based on our literature review, there are some implications that we can conclude. There are different classifications to tacit knowledge but at the end we can summarize that all Tacit Knowledge is stored in the individual's mind one way or the other. Which implicates that a great amount of knowledge developed in the organizations is in the employees' minds, which can generate a risk to lose this knowledge by not being able to identify and manage it correctly.

Looking for answers to our questions, we were able to find various classifications of Tacit Knowledge, and that only 2 kind of knowledge cannot be shared: Strong Knowledge that cannot be explained or converted (Collins, 2010) and Automatic Knowledge, which is difficult to share but can be transferred person-to-person, in other words can be acquired through having an adequate Ba in the organization. Our literature review showed evidence that all the remaining classifications can be shared and contribute to the development of the corporate competitiveness. Nevertheless, trying to answer our second review question (*Does the organization know the knowledge that needs to be shared?*), we weren't able to identify a contudent tendency on whether the managers are aware which tacit knowledge needs to be shared and how to identify it.

We were able to find enough literature on the importance of tacit knowledge in developing an organizational competitive advantage, but we could not find enough evidence in the Organizational Awareness of Tacit Knowledge. Which generates a field for future researches to deepen this concept filing the gaps that exists at the moment.

According to Wang (Wang, 2019) how to promote knowledge sharing in the organization, especially the tacit knowledge sharing, is the key to promote the organization's competitiveness, operating ability and innovation ability. So, our findings contribute to the understanding of tacit knowledge, its implications of a correct knowledge management strategy and generates the base for future researches on Organizational Awareness of Tacit Knowledge. Knowing that the firm-specific knowledge that accumulates around subordinate tacit knowledge-based tasks might prolong the advantages derived from explicit knowledge.

REFERENCE

- Nonaka, I. (1991). The knowledge-creating company. *Harvard Business Review (November–December)*, 96-104.
- Abu-Shanab, E., Haddad, M., & Knight, M. B. (2014). Knowledge Sharing Practices and the Learning Organization: A Study. *The IUP Journal of Knowledge Management*, 38-50.
- Ahmad, F., & Karim, M. (2019). Impacts of knowledge sharing: a review and directions for future research. *Journal of Workplace Learning*, 31(3), 207-230.
- Andrews, K. (1987). *The concept of corporate strategy (3rd ed.)*. Illinois: Dow Jones-Irwin.
- Andriani, M., Samadhi, A., Siswanto, J., & Suryadi, K. (2019). Knowledge management strategy: an organisational development approach. *Business Process Management Journal*, 1474-1490.
- Argote, L., & Ingram, P. (2000). Knowledge Transfer: A basis for competitive advantage in firms. 82(1), 150-169.
- Argote, L., McEvily, B., & Reagans, R. (2003). Managing knowledge in organizations: an integrative framework and review of emerging themes. *Management Science*, 571-582.
- Cabrera, E. F., & Cabrera, A. (2005). Fostering knowledge sharing through people management practices. *The International Journal of Human Resource Management*, 16(5), 720-735.
- Charterina, J., Basterretxea, I., & Landeta, J. (2017). Collaborative relationships with customers: generation and protection of innovations. *Journal of Business & Industrial Marketing*, 32(2), 733-741.
- Chen, H., Baptista Nunes, J. M., Ragsdell, G., & An, X. (2019). Somatic and cultural knowledge: drivers of a habitus-driven model of tacit knowledge acquisition. *Journal of Documentation*, 927-953.
- Chen, H., Baptista, J. M., An, X., & Bai, W. (2016). Motivation and Awareness for Tacit Knowledge Sharing in Chinese Software Organisations. *Proceedings of the International Conference on Intellectual Capital, Knowledge Management & Organizational Learning*, 73-81.
- Chen, H., Baptista, J. M., Ragsdell, G., & An, X. (2019). Somatic and cultural knowledge: drivers of a habitus-driven model of tacit knowledge acquisition. *Journal of Documentation*, 927-953.

- Coff, R. W., Coff, D., & Eastvold, R. (2006). The knowledge- leveraging paradox: How to achieve scale without making knowledge imitable. *Academy of Management Review*, 452-465.
- Collins, H. M. (2010). *Tacit and Explicit Knowledge*. Chicago: University of Chicago Press.
- Daghfous, A., Belkhdja, O., & C. Angell, L. (2013). Understanding and managing knowledge loss. *Journal of Knowledge Management*, 639-660.
- Dalkir, K. (2017). *Knowledge management in theory and practice*. MIT press.
- Dobson, J. (1999). *The Art of Management and the Aesthetic Manager: The Coming Way of Business*. Connecticut: Quorum Books.
- Dreyfus, H. L. (2007). Why Heideggerian AI failed and how fixing it would require making it more Heideggerian. *Artificial Intelligence*, 1137-1160.
- Enberg, C., Lindkvist, L., & Tell, F. (2006). Exploring the dynamics of knowledge integration: Acting and interacting in project teams. *Management Learning*, 143-165.
- Fannoun, S., & Kerins, J. (2019). Towards organisational learning enhancement: assessing software engineering practice. *The Learning Organization*, 44-59.
- GĂITĂNARU, A. (2019). Information Society, Knowledge Society. *The 15th International Scientific Conference eLearning and Software for Education Bucharest*, 229 - 236.
- Gao, F., Li, M., & Clarke, S. (2008). Knowledge, management and knowledge management in business operations. *Journal of Knowledge Management*, 3-17.
- Hadjimichael, D., & Tsoukas, H. (2019). Toward Better understanding of Tacit Knowledge in Organizations: Taking stock and moving forward. *Academy of Management Annals*, 672-703.
- Halverson, R., & Gomez, L. (2001). Phronesis and Design: How Practical Wisdom is Disclosed through Collaborative Desig. *American Educational Research Association Annual Meeting*, 1-21.
- Hofer, C. W. (1978). *Strategy formulation: Analytical concepts*. Minnesota: West Educational Publishing.
- Hong, J. (2012). Globalizing Nonaka's knowledge creation model: Issues and challenges. *Management Learning*, 199-215.
- Huang, Q., Davison, R. M., & Gu, J. (2011). The impact of trust, guanxi orientation and face on the intention of Chinese employees and managers to engage in peer-to-peer tacit and explicit knowledge sharing. *Info Systems J*, 557-577.
- Ismail, M., & Hamzah, S. (2018). Differentiating knowledge transfer and technology transfer What should an organizational manager need to know? *European Journal of Training and Development*, 611-628.
- Johnson, J. L., Adkins, D., & Chauvin, S. (2020). Qualitative Research in Pharmacy Education. *American Journal of Pharmaceutical Education*, 138-146.
- Kale, P., Singh, H., & Perlmutter, H. (2000). Learning and protection of proprietary assets in strategic alliances: Building relational capital. *Strategic Management Journal*, 217-237.
- Kitchenham, B. (2004). Procedures for Performing Systematic Reviews. *Keele University*, 1-33.
- Lei, H., Khoi Do, N., & Ba Le, P. (2019). Arousing a positive climate for knowledge sharing through moral lens: the mediating roles of knowledge-centered and collaborative culture. *JOURNAL OF KNOWLEDGE MANAGEMENT*, 1586-1604.
- Levallet, N., & Chan, Y. E. (2019). Organizational knowledge retention and knowledge loss. *JOURNAL OF KNOWLEDGE MANAGEMENT*, 176-199.
- Mahnke, V., Pedersen, T., & Venzin, M. (2009). DOES KNOWLEDGE SHARING PAY? A MULTINATIONAL SUBSIDIARY PERSPECTIVE ON KNOWLEDGE OUTFLOWS. *Advances in International Management*, 123-149.
- Nonaka, I. (2007). The Knowledge-Creating Company . *Harvard Business Review* , 162-171.
- Nonaka, I., & Krogh, G. (2009). Tacit Knowledge and Knowledge Conversion. *Organization Science*, 635-652.
- Nonaka, I., & Takeuchi, H. (1995). *he Knowledge Creating Company*. New York: Oxford University Press.
- Nonaka, I., & Toyama, R. (2007). Strategic management as distributed practical wisdom (phronesis). *Industrial and Corporate Change*, 371-394.
- Nonaka, I., Kodama, M., & Hirose, A. (2014). Dynamic fractal organizations for promoting knowledge-based transformation. *European Management Journal*, 137-146.

- Nonaka, I., Toyama, R., & Hirata, T. (2008). *Managing flow: A process theory of the knowledge-based firm*. United Kingdom: Palgrave Macmillan.
- Nonaka, I., Toyama, R., & Konno, N. (2000). SECI, Ba and leadership: a unified model of dynamic knowledge creation. *33*(1), 5-34.
- Nonaka, I., Toyama, R., & Konno, N. (2000). SECI, Ba and Leadership: a United Model of Dynamic Knowledge Creation . *Long Range Planning (Página1)*., 5-34.
- Nurye, S. A., Molla, A., & Assefa, T. (2019). Factors Influencing Knowledge Transfer in Onshore Information Systems Outsourcing in Ethiopia. *The African Journal of Information Systems*, 279-298.
- Oluikpe, P. (2012). Developing a corporate knowledge management strategy. *Journal of Knowledge Management*, 862-878.
- Pereira Moreira, J. d., Graças Viera, M. d., & Gomes da Silva, C. (2015). Among Theory, Practice and Technology. *Brazilian Business Review*, 123-139.
- Polanyi, M. (1962). *Personal Knowledge*. Chicago: The University of Chicago Press.
- Polanyi, M. (1966). *The tacit dimension*. Chicago: The University of Chicago Press.
- Polyani, M., & Prosch, H. (1975). *Meaning*. Chicago: The University of Chicago Press.
- Rhomberg, L. R., Goodman, J., Bailey, L., Prueitt, R., Beck, N., Bevan, C., . . . Becker, R. (2013). A survey of frameworks for best practices in weight-of-evidence analyses. *Informa healthcare*, 753-784.
- Selznick, P. (1957). *Leadership in administration*. New York: Harper & Row.
- Sitzmann, T. (2011). A meta-analytic examination of the instructional effectiveness of computer-based simulation games. *Personnel Psychology*, 489-528.
- Spender, J. C. (1996). Making knowledge the basis of a dynamic theory of the firm. *Strategic Management Journal*, 45-62.
- Tecnologico de Monterrey. (28 de February de 2020). *biblioteca digital/catalogos*. Obtenido de <https://biblioteca.tec.mx/az.php?v=65906>
- Tsoukas, H. (2011). *How should we understand tacit knowledge? A Phenomenological view*. Chichester: John Wiley and Sons.
- Wang, R. (2019). Evolutionary game of knowledge sharing in master-apprentice pattern of innovative organization . *International Journal of Innovation Science*, 436-453.
- Yang, L. (2010). Exploring the transferring mechanism of tactic knowledge of individual technical ability in mentor-apprentice. *East China Economic Management*, 98-102.
- Yao, Z., Yang, Z., Fisher, G. J., Ma, C., & Fang, E. E. (2013). Knowledge complementarity, knowledge absorption effectiveness, and new product performance: the exploration of international joint ventures in China. *International Business Review*, 216-227.
- Yusof, W. S., Zakaria, O., & Zainol, Z. (2016). Establishing of Knowledge Based Framework for Situational Awareness Using Nonaka's And Endsley's Models. *2016 International Conference on Information and Communication Technology (ICICTM)*, 47-50.