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The Role of Opinions and Ideas as Types of Tacit Knowledge

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Abstract

Purpose: The paper identifies the difficulties associated with managing tacit knowledge in its entirety among distributed individuals and proposes its categorization into types/kinds as a solution for its effective externalization and measurement. The categorization process implies the identification of those types or kinds of tacit knowledge which could be externalized and measured easier than others. The paper posits that such categorization is a step in the right direction for better tacit-to-explicit transformation.
Design: The paper is designed based on literary evidences supporting that some parts or instances of tacit knowledge could be more easily externalized/transformed into explicit form than other forms. This research through the analysis of opinions and ideas focuses on building up the relationship between tacit knowledge and these two constructs. The paper will introduce a comparative analysis between opinions and ideas and tacit knowledge.
Findings: The relationships and correspondences between opinions/ideas and tacit knowledge are developed and a Reflection-articulation-interpretation model which demonstrates these relationships and the externalization to explicit knowledge.
Practical implications: The introduced relationships between Tacit Knowledge Instances, Opinions and Ideas as well as the externalization model form the basis for proper tacit knowledge externalization based on its categorization. The authors believe that if tacit knowledge is categorized into types, this will have positive effects on improved tacit knowledge externalization.
Originality: The proposed Model and the framework are not only original but, to the authors knowledge, are a unique attempt addressing tacit knowledge categorization and how opinion/ideas are externalized.

Keywords: Tacit Knowledge; Opinion/ideas; Knowledge Externalization; Tacit Knowledge Categorization

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1. Introduction

Recently, business research stressed that organizational productivity and competitiveness is rooted in the success of capturing what employees know, "Tacit Knowledge", and its effective dissemination within the organization. Achieving this failed due to miss-understanding the core of what knowledge is and how to articulate, capture, disseminate and retain tacit knowledge. Tacit knowledge is the wealth of an individual and will not let go of it easily. Organizational incentives and change of culture are integral for the release of this individual knowledge. The core of the problem relies on the literature's evidence that tacit knowledge is very difficult to be deal with and that its release and its capture is never completely successful. There is always something missing in the transformation process which is very hard to articulate/translate, because of one own' experience associated with his/her know how, or because it is based on the individuals' accumulation of past knowledge, analytical abilities and problem solving skills. The paper advocates that if it is possible to identify types of tacit knowledge which are easier than other to be articulated, released and captured than the transformation of these types would be easier. Fig. 2 shows that the individual's opinion/ideas are types of tacit knowledge which, through their nurture the transformation is achievable. The Reflection-articulation-interpretation model (Fig. 2) shows the nurture process. Table 1 introduces a comparison table which would help in transforming opinions and ideas into knowledge and the tools required in a geographically distributed group members' environment. Jennex [1] stated that the recent technical, social, and process changes are impacting KM and changing the way KM systems (KMS) are designed, built, implemented, and used.

2. Opinions and ideas as parts of knowledge transformation

"*A Clod can have the facts, having opinions is an art* -- Charles McCabe**" [2]**

Fig. 1 is [3] basic communication diagram which shows the phases of the reflection/action among two individuals, persons A and B, who are engaged in the development of a joint document.

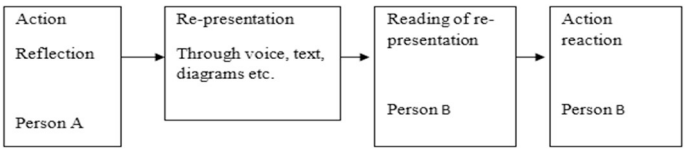

Fig.1. Welsham's Basic Communication Diagram.

The development of the diagram in Fig. 2 follows the knowledge creation process introduced by Nonaka and Takeuchi [4] in their SECI Model where they posited that knowledge creation follows four sub-processes namely Socialization, Externalization, Internalization and Combination. Fig. 2 extends Welsham's showing how geographically distributed group members "nurture" their opinions/ideas into tacit knowledge. Fig. 1 assumes that person A is reflecting on a problem with a pre-defined context and a set of goals and objectives articulates his/her perception on the problem into the shared document in the form of opinions/ideas. Another individual, say (Person B), becomes in a state of interpretation-reflection-perception reflecting on Person A's articulated knowledge. Accordingly, he/she might either engage in a discussion with (Person A) for more clarification on his/her intended meaning or contents of the opinion/idea, or, alternatively, might update the content of the document introducing his/her perception on the original content and release the document back into the system.

Fig. 2 shows what happens upon an individual's reflections on a particular piece of information and extends Welsham's communication diagram to concentrate on opinions and ideas and an interpretation process of the roles involved (person A and B).

This process takes into consideration the different types of knowledge released by the group members as well as the type of knowledge (explicit and tacit). It could be simply explicit where there will be no need for further clarification by the other members, or it could be tacit embodied where some clarification is required, or not-yet-embodied released in the form of opinions and ideas where high level of (communication) message exchange or

document's update is required in order for more of this knowledge to be articulated. This means bringing knowledge from the unconsciousness into the consciousness. This argument is made clearer in the Catholic Encyclopedia's discussion on the types of knowledge "it is impossible that all the knowledge a man has acquired should be at once present in the consciousness. The greater part, in fact all of it with the exception of the new thoughts actually present in the mind, is stored up in the form of latent dispositions which enables the mind to recall it when wanted."

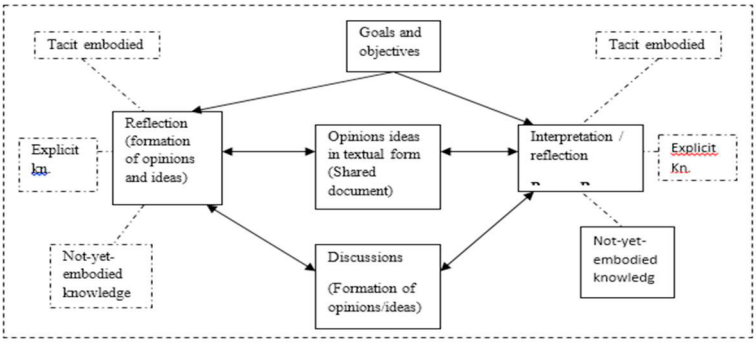

Fig. 2. The Proposed Reflection-articulation-interpretation Model.

3. Opinions and Ideas as tacit knowledge types

There is a widespread agreement that personal contact with an observation of other's is a critical factor in knowledge acquisition [5, 6, 7]. In this research, the personal contact is defined as the exchange of massages and/or the document updated by the members. Cook et al. [8], and Collis et al. [5] suggested an interactive process of acting on the material being transformed, working with others more expert in the field, receiving their judgment on transformation efforts, attempting to meet their standards and see what they see, identifying critical factors and so on.

Knowledge generation has numerous dimensions of representation, emerging as a result of multiple interactions and processes between individuals and groups. The fundamental business activity within organizations is group-based that create, preserve, and then project knowledge into the marketplace, embodied in the form of services or products. Hawryszkiewycz and Lin [9] argued that the requirements of a new product must be defined and refined as new ideas come up and feedback is received from potential users.

In general, knowledge is subjective in nature and intimately linked to individual and collective interpretations. Knowledge is considered as either easily articulated or hardly articulated depending on its categorized types. Opinions and/or ideas refer to an individual's release/articulation of his/her understanding, perception, analytical thinking, and interpretation on a given problem and/or situation. The importance of the release of individuals' opinions/ideas lies in their impacts on other individuals who might have an interest in a solution to a problem, hence, might trigger the formation of more opinions/ideas generation between individuals. Hawryszkiewycz and Lin [9] stated that "group activities are only effective if they follow processes that encourage idea generation and evaluation, discussion and conflict resolution in timely ways following well defined learning steps." The importance of the release of opinions and ideas in remote group work interactions is inevitable for the success of the product being developed as it reflects the individual's analytical solution, perception, or know-how towards the solution. The opinion/idea of an individual is the result of his/her accumulated experiences, work practices, know-how etc. The value of an opinion/idea resides in providing a solution which might not be seen by others the same way. Opinions/ideas might also generate discussions and in most cases more knowledge articulation. What distinguishes an individual's opinions and ideas is that "drop" of his/her hidden intelligence towards the solution of a problem which makes it possible for others to be exposed to possible solutions to a bottleneck, conflicting views, or problems.

Conflict and differences among the individuals' articulated opinions and ideas would result in the formation and release of more creative opinions/ideas within the individuals. Novel ideas and constructive opinions arise among individuals from such articulation and acceptance of each other's contribution.

Nonaka [10], in his book "The Knowledge Creating Company" stated that "Only experience can provide the mind with ideas and that there are two types of experience: sensation (or sensory perception) and reflection (or the perception of the operation) of our mind within us," which is "the other fountain from which experience furnished the understanding of ideas." This statement was also supported by Bratianu and Orzea [11].

Individuals should be encouraged and given incentives to articulate what they know in the form of opinions and ideas for further discussions and nurture. Kikoski et al. [12] stated that what is unsaid and unexpressed could be the reservoir of tacit knowledge. This articulation is short in providing the full intended meaning by the originator of the opinions and ideas - as in "We can know more than we can tell", [13]- and any knowledge that he/she has in regard to a particular context has to be subsequently discussed among the individuals. This process might trigger either clarification by the originator and/or the release of more of his/her knowledge, and/or its nurture and amplification by others. Turban et al. [14] stated that "Several studies have now indicated that individual creativity is not so much a function of individual traits as was once believed, and that it can be learned and improved. This understanding has led innovative companies to recognize that the key to fostering creativity may be the development of an idea-nurturing work environment."

4. The source of personal knowledge

In order to share personal knowledge, individuals must rely on others to listen and react to their ideas. Constructive and helpful relations enable people to share their insight and freely discuss their concerns [15]. Each employee should maximize his contribution to the pool of ideas that provide competitive edge for the firm [11].

Cook and Brown [8] stated that tacit knowledge is "distributed in the totality of the individual's action experience." And that it relies on "tactile cues registered by the human body interacting with its environment." The opinion of a person is closely related to the context in which it is released and nurtured as well as the series of events, circumstances, and interactions which lead the person to articulate it. A change in the events or circumstances during interaction or the emergence of a stimulus might trigger a change and or modification in the released opinion/idea of the individual the same way face-to-face discussions/conversations results in idea generation and learning, hence the accumulation of more personal knowledge. The key here is exposure to other's thoughts, opinions, and ideas. There are two dimensions of tacit knowledge: the first is the technical dimension which encompasses the "know-how", the second is the cognitive dimension which consists of beliefs, ideas and values which we often take for granted [16].

Ideas, on the other hand, are more susceptible to changes or emergent situations within a given context especially in design environments where work depends on creativity. Ideas are not associated with reasoning and are altered easily by individuals, not always necessarily to major events, circumstances, or social milieu.

The nurturing of ideas and opinions might follow either a manual method or be electronically induced [17], argued that "when manual idea-generation fails, it makes sense to electronically induce idea generation". Massetti [18] demonstrated posited that computer-enabled people were more creative in problem solving. This is surely caused by the atmosphere of relaxation in remote group interaction.

5. Opinions and ideas in perspective

Opinions and ideas are not personally subjective, but collectively subjective. However, despite the inevitable subjectivity, objectivity in the process of releasing opinions and ideas should be of paramount importance and all measures should be taken to ensure that. The objective selection of opinions and ideas should be relevant to the goals and objectives of the group. We have to ensure better externalization of individual's opinions and ideas nurtured as a result of interactions and discussions given a specific context (e.g. developing a product) and a set of predefined goals and objectives. An interactive environment ensures the nurturing of opinions and ideas based on the building of sensory inputs between the members which represents a stimulus for the 'dormant' parts of a members' not-yet-embodied knowledge.

Opinions are evidently more solid than ideas as they mainly rely on experiences, beliefs and expertise lived by human. According to Maturana et al. [19], opinions may be based on people's perception during an observation and every time a person is confronted with new sensory input, that person reacts to the new stimulus with his/her experiences and beliefs. Knowing, experiences, work practices etc. are prerequisites for the individual's formation of

his/her opinions. An individual has to possess a profound understanding, reasoning, and perception of a particular subject in order to be able to present a strong opinion on a given context. General knowledge is important to opinions, but the proper contextual opinions are justified with solid background (knowledge, expertise, and experiences). The ability of the individual to justify his/her released opinion(s) surely strengthens it. Consequently, an opinion is associated with two parts, namely the actual opinion and its reasoning or justification.

Part of the individual's tacit knowledge is formed as a result of capturing and nurturing his/her opinions as indicated in Fig. 1.

The opinion of a person has its grounds in what was accumulated and perceived during a long period of time as a result of observations, work practices, storytelling, and experiences. The basis of an individual's opinion has its grounds in past knowledge accumulated in his/her brain. The opinion of an individual is articulated "NOW" but has its roots in the "PAST", during his/her learning process. This interplay between present and past is important because it represents the originator's perception and understandability of the "present" and his/her ability to bring along knowledge from the "past" to develop opinions which might help in resolving present problems.

Opinions are verified based on prior knowledge, hence are normally substantiated with "knowing", i.e., one cannot articulate his/her opinion without a solid perception of a particular analysis of events that happened in the past or in a given context which lead to his/her the opinion. For example, the statement "I believe it is going to rain tomorrow", cannot be stated without prior knowledge, observations, and analysis by the individual about certain events that might have lead previously to rain.

An opinion has two parts, the actual opinion and the reasoning behind it. This changes the statement about the rain to "I believe it is going to rain tomorrow, because there are too many clouds and the temperature dropped low". This statement is much stronger and convincing than the original one because of the added reason about the opinion. The subject's prior knowledge (black clouds and cold) and experiences (he/she had experienced rain as a result of black clouds and low temperature) led to his/her opinion. This logic, in most cases, is shared among others easily because they may have similar experiences and observations.

In collaborative work, group members normally have similar or very close prior knowledge, expertise, and backgrounds hence, their opinions might be similar or at least understandable.

Empirical analysis rather than solid analysis is the basis of ideas. They are usually dependent on one's imagination and level of intelligence and based on what a person identifies as logical based on their perception to a given mental reasoning. When team members take a lenient and helping attitude towards one another, new ideas flow easily, and even radically different knowledge can be created [15].

Ideas are not always verified with reasoning. They are thoughts based mainly on intelligence that cannot be always verified with reason or logic. They are mostly irreducible and have no precedence. They are generally based on the individual's imagination, creativity, analysis and intelligence and not generally proven by scientific data.

Plato stated that, the physical world is a mere shadow of the perfect world of "ideas". Human beings aspire toward the eternal, unchanging, and perfect "ideas" that cannot be known through sensory perception but only through reason. Aristotle criticized Plato and stressed the importance of observation and the clear verification of individual sensory perception. Csikszentmihalyi and Sawyer [20] have arguably stated that ideas are, in addition, a result of interaction and dialogue. It is only by interacting with other people that one can get anything interesting done; it's essentially a communal enterprise.

What is interesting about ideas is that they seem to point beyond nature to some transcendent realm. This might be problematic in group work because ideas cannot always be supported by strong arguments and logic. Intelligence plays a major role in the formation of a person's ideas. Intelligence, which can be defined as the ability of a person to comprehend, to show creative behavior, and to acquire, retrieve, and use knowledge in a meaningful way to understand concrete and abstract ideas shapes the ideas formation of an individual. Ideas may generate discussions, which help in the process of attaining goals and objectives. The main difference between opinions and ideas is that, the former is verified based on prior knowledge, whereas ideas are thoughts, which are based on the individual's intelligence that cannot always be verified with reason or logic.

Both, ideas and opinions are integral for knowledge creation in a group setting. They are developed by and among group members in a contextual setting through a conversational process. This context is what the group members aim to achieve based on predefined goals and objectives. Consequently, individuals and group's opinions and ideas aim to verify the context of work. Ideas can be generated easily through interaction with objects of the world. Smith [21]

has gone further to relate ideas to learning "our long-term success requires total commitment to working together effectively and a willingness to embrace new ideas and learn continuously." Hutchings [22], related ideas generation to teaching and learning and discussed how they can be integrated.

Ideas and opinions generation should follow a process, which ensures, for group members, a platform for knowledge capture. Ideas are about potentials and innovations are about results [23]. This argument is important as the task of organizations should be on turning simple ideas into innovative ideas which will yield positive results for the organization. Innovation is important because it allows companies to create substantive customer value within a highly competitive environment. In fact, he asserts that innovative organizations wield innovation to take advantage of opportunities when they arise and outpace their competitors in the process. Dobni [24] introduced an innovation model which could be applied in organizations for turning their individuals' ideas and opinions into beneficial results. Toubia [25] discussed the importance of ideas generation in products development.

Leonard et al. [6] and Anderson et al. [26] argued that creative ideas do not arise spontaneously from the air but are born out of conscious, semiconscious, and unconscious mental sorting, grouping, matching and modeling. Consequently, a process is indispensable for the group members to systematically release their opinions and ideas. Within this process the opinions and ideas gathered would be filtered from those that do not satisfy the goals and objectives. As a conclusion, thoughts, views, impressions, expertise, knowledge, concepts, beliefs and judgments, which are parts or instances of tacit knowledge, have equivalent parts or instances in opinions and ideas. Table 1 the research's common characteristics among these instances as well as the possible technologies for the articulation of the different types or instances of tacit knowledge for geographically distributed communication.

Table 1. Proposed relationships between tacit knowledge instances, opinions and ideas.

Types of Tacit knowledge (TKn)	Articulation of tacit Knowledge	How they relate	Source of knowledge	Technology requirements for TKn Types Articulation
Subconsciously understood and applied (know-how, instinct, ideas)	An idea articulated and/or expressed as a result of accumulated empirical knowledge and individual intelligence and vision in the form of special concept and solutions to a problem which might point beyond expectations/nature and exchanged with others. It is accepted as a last resort and because of lack of prior knowledge by others (*)	Link: some issues can't be explained but are still adopted when articulated. They point beyond novelists.	Experience, practice, research, intelligence	GSS, interactive systems, conversational systems (Blogs, Wikkis, LiveNet, Notes, VIPGSS
Difficult to articulate/ to document (know-how, expertise, thoughts, instinct, analytical skills)	Experts' opinions articulated and expressed as judgment based on special knowledge accumulated through years of observations and mental analysis. Acceptance by less experienced strengthen it (**)	Link: experts tend to stand after their articulated opinions and convince others of the validity of their problem-solving analysis through work practice and group interaction and/or messaging	Work practice, group work, repetitive tasks, experience	GSS, Interactive systems, cooperative systems
Developed from direct experiences and actions (expertise, work engagement, practice, idea)	Opinions articulated and/or expressed based on judgment or sentiment as a result of knowledge accumulation through learning by doing, repetitive tasks or formation of figures in the mind about a person or thing by recording own experiences (**) Ideas articulated as thoughts/concepts in mind as a result of products development and/or mental activity, conviction, or principle which might raise awareness in others (*)	Link: impressions can only be established through experiences. Opinions and ideas are tried to convince others with their validity	Shared experiences, observations, work practices, reflections, learned by doing	Video/audio conferencing, GSS, Blogs, DSS
Shared through interactive conversations	Opinions articulated or expressed in the form of Believes shared by most people through direct, group work discussions, joint formal	Link: sharing of opinions and ideas occurs in the form of group collaboration work and	storytelling, group work, interaction,	GSS, Blogs, Wikkies, face-to-face

Types of Tacit knowledge (TKn)	Articulation of tacit Knowledge	How they relate	Source of knowledge	Technology requirements for TKn Types Articulation
(know-how, view, idea, opinion)	decision on particular topics, expression of view backed by prior experiences (**) Ideas articulated/expressed in plan/suggestion forms based on views and know-how accumulated through exchange of knowledge with others. The individual might dictate what to do in particular situation (*)	consequentially decisions will be taken/adopted	opinions/ ideas, Blogs, Wikis	interactions, conversational systems, cooperative systems
Belief (culture, religion, exposure, habits)	An opinion articulated and/or expressed as a message expressing acceptance to societal rules, regulations, and/or taboos. Listening and involvement strengthen the articulated opinion (**) Ideas articulated and expressed as a result of encouragement from others in similar situation or rituals and they are accepted by them as a result of prior success in innovative ideas (*)	Link: people can be encouraged through stories about prior success. Opinions and ideas can strongly be attached to believe, and acceptance is easy especially for believers or experts.	Storytelling, group work, work practice conversation, meetings	Blogs, Wikkis, emails, message systems, conversational systems
Common practice (belief, know-how expertise)	An opinion articulated and/or expressed which is known and shared by most people in a workplace. The opinions might have hidden aspects from others which facilitate its acceptance group work facilitates its nurture (**) An ideas articulated and/or expressed in the form of a plan/suggestion dictating to others what to do in an emergent situation to solve a problem (*)	Link: Opinions and ideas are well accepted by people and encouraged through working together and repetitive group work.	storytelling, conversation, practice, observations, documents, files, memory, communicatio n, cooperation	emails, messages, conversational systems, cooperative systems
Informal/un-codified (concepts, logical analysis, intuitions, talents)	An opinion articulated by a person as a result of mental analysis and analytical perception not founded on proof/certainty but open conversation and discussions with others (**) An idea in the form of concepts, philosophies, images, issues, based on psychological stimulus for problem adjustment and solving as in word of mouth (*)	Link: the fact that it has not been found on proof or certainty renders opinions and ideas informal. Good communication makes their verification and acceptance easy	Experiment-ation, interactions, discussions, observation, creativity	Message systems, documents, emails, blogs, experimental systems
Ephemeral and transitory (thoughts, inceptions, view)	An idea articulated as a figure or expressed as impression in the mind of individuals. Persistence of the idea is not guaranteed until accepted by others and may vanish if not used properly (*)	Link: some things do not just last forever and may come up again any time. Opinions and ideas are important at emergent situations and might not be adopted or valid later because they are based on need in particular situations	imagination, reflection, engagement, discussion, trigger, group work	Emails, conversational systems
Formal/embodied (thoughts, views, belief)	An opinion articulated as a fact accepted by most people. Its easy acceptance makes it a fact or a given (**) An idea expressed as a heart of message, content of piece, main theme and circulated among groups and communities. Discussions	Link: some things are taken for granted. Opinions/ideas are in the mind of most people. Special circumstances trigger them in the heads of most people and are accepted	exposure, instinct, perception, rules, documents, files, memory	GSS, DSS, emails, Blogs, Notes, Wikkis, documents

Types of Tacit knowledge (TKn)	Articulation of tacit Knowledge	How they relate	Source of knowledge	Technology requirements for TKn Types Articulation
	among individuals might guarantee its acceptance as a fact (*)	without need for many discussions. Their articulation renders them valid		

Table 1 shows the instances of opinions (*) and ideas (**) and their corresponding tacit knowledge instances and common features. The externalization of the individual's opinions and ideas is an externalization of parts of his/her tacit knowledge. This externalization, and because of the varieties in the types of knowledge other than opinions and ideas, such as thoughts, believes, expertise might require different, but also similar, types of technologies for their externalization.

Diverse, and in many cases, combination of technologies are required for additional individuals' knowledge to be acquired, accumulated, and/or nurtured especially when they are exposed to new ideas, opinions, thoughts, views, expertise and know-how. Cook and Brown [8] stated that "the requirements of a new product must be defined and refined as new ideas come up and feedback is received from potential users", consequently, the change of the requirements may influence the required knowledge for the process and the way the process is fulfilled.

Generally, the more dynamic a process is the more is the reliance on different technologies for the fulfillment of the imbedded tasks and activities within the process. This dynamicity is an integral part in group work as it caters for dynamic technological support as the more knowledge is created and exchanged within the groups and among groups, different technological support would be needed for knowledge externalization. These technologies should cater for the increasing reliance on social relationships where there is greater emphasis on user analysis and communication [9], hence less and less reliance on emails to manage the dynamic changes in process development. An important impact of this new trend is the creation of different technical solutions that support user driven changes [9] and the emergent knowledge during the development of the process.

In addition, globalization and its associated new ways of remote cooperative work businesses are looking for additional technological supports as means to create, capture, and retain the resulted knowledge generated from different geographical locations. New ideas, opinions, thoughts etc. are being constantly generated and exchanged within the different geographically distributed locations of the same organization as well as among organizations. Relying on emails and on face-to-face technologies and techniques is not sufficient for the externalization of today's organizational knowledge. Consequently, existing (GSS, Blogs, Notes, Wikki etc) as well as customized and/or newly developed technological supports are required to cater for the different types of knowledge within and among organizations. Special, and possibly new, technological support for tacit knowledge externalization must be developed as a result of the exponential increase in the amount of knowledge being created, generated, acquired and exchanged in today's emerging business competitiveness.

6. Conclusion

The paper argued that it is imperative for the proper capture and articulation of tacit knowledge that it should be categorized into types. This categorization would identify instances of tacit knowledge which are easier for the externalization than others. Based on extensive literature review, the paper proposes opinions and ideas are such types of tacit knowledge which could be used to achieve better tacit to explicit transformation [27]. Externalization process was used as guide, together with the literature's support that some parts or instances of tacit knowledge could be easily externalized and transformed into explicit form, and others are not. The research, analysed opinions and ideas and focused on their relationship to tacit knowledge. It introduced opinions and ideas and analysed them to build a logical relationship with tacit knowledge. This was achieved through a comparative analysis between opinions and ideas and tacit knowledge, and these relationships were verified by building a comparative model which demonstrated the relationship between them, the articulation of opinions/ideas to tacit knowledge, the source(s) of knowledge, and the technology(ies) adoption. Although the literature does support the categorization of tacit knowledge into types but, to the authors' knowledge, there is no research which demonstrates what these types are and how they are related to tacit

knowledge. The thesis introduced an original Reflection-articulation-interpretation Model which demonstrates how opinion/ideas are transformed into tacit knowledge among geographically distributed group members. The authors believe that this paper lays the ground for how types can be identified, relate to tacit knowledge and what technology is required for the types' transformation into tacit knowledge.

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