NEW KNOWLEDGE CREATION AND CRISIS MANAGEMENT TEAM'S PERFORMANCE

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ABSTRACT: *Crisis is a change, resulting in an urgent problem, which must be addressed immediately. As crises are unique events, hence, Crisis Management Team (CMT) requires high level of creativity and needs to generate novel solutions in order to cater crisis situations. Crisis management is relatively new and less explored field of study. Few attempts have been made to study how crisis management team's performance can be improved. Current study used the knowledge management lens and proposed a model for improving CMT`s performance. "Knowledge creation" concept of Nonaka and "Double loop learning" concept of Argyris have been used to develop the model. This conceptual paper not only enriches the literature of crisis management but also extends the applicability of knowledge management in other areas of management.*

Key Words: *Knowledge Creation, Double loop learning, Crisis Management, Knowledge Integration, Team`s Performance*

1. INTRODUCTION

Crisis is a change, either sudden or evolving, that results in an urgent problem that must be addressed immediately [1]. It can affect the whole organization and may lead to entire collapse as in case of Baring bank and Enron. That's why, organizations are keen to understand and implement the new methods of preventing crisis. Crisis management research has moved from event approach to process approach. Process approach tries to encompass each and every aspect related to crisis, right from crisis preparedness to post crisis management. Crisis management researchers give great attention towards crisis preparedness of the organizations. They check whether a company has the philosophy of Crisis prone or Crisis Preparedness [1]. Crisis prone businesses are ready to encounter the crisis that a company has already suffered. On the other hand, crisis prepared companies try to make a plan by keeping in view the broader scope of situation that may happen within an organization.

Decision making is compelling matter of public interest in times of organizational crisis. Whether organizational crisis arises from environmental contamination, executive malfeasance, terrorist activity or any other triggers, ineffective and late decisions can exaggerate the impact of crisis. Managers of the organization, who are at the midst of crisis, must be so vigilant and creative enough to quickly figure out the sources of crisis and devise a creative action strategy which may contain and eventually suppress the crisis. Creativity is not only required after a crisis hits or is going to hit an organization but also for actively planning for potential crisis. Crisis management teams are responsible for suggesting creative solutions to the problems. Novelty is the main feature of creative decisions.

In competitive and rapidly changing environment, organizations have moved from conventional structures to team based structures [2]. Organizations have adopted team structure called Crisis Management Teams (CMTs) comprised of those capable individuals who have authority of making decisions. Through simulations, brain storming, and other CMT activities, teams have developed the capacity of making novel decisions in the time of crisis. These CMTs proceeds in a manner that is almost similar to creative approach of problem solving. A shared system which emerges from learning, storing and retrieving information facilitates performance of the group by providing guidelines to match the knowledge of the members [3]. Relational [4] and experiential [5] resources help teams in better performance with the help of better integration [6].

This paper identified knowledge management as emerging field having substantial potential to provide valuable insight to address the issue of CMTs creative decision making. An overview of knowledge management field identified some exceptionally relevant concepts, frameworks and theories through which knowledge "lens" could be used to increase the performance of crisis management teams. Illuminating concepts emerge from the field of creation of new knowledge [7], organizational learning [8] and knowledge integration [6] can be used for more efficient crisis team's performance.

Nonaka has provided a framework for knowledge creation that explained the drivers of creating new ideas and concepts with the help of dialogue between explicit and tacit [7]. Individual form ideas in their minds and interaction plays crucial role in developing these ideas. Interaction within communities facilitates the process of development and amplification of new knowledge creation [7]. Knowledge is created by individuals. Similarly, Gardner has pointed out that integrating the knowledge resources of teams will result in an increased team performance [6]. With the help of greater interaction among the team members, they share their tacit and explicit knowledge which is internalized and embodied in the members. Such approach helps the teams in generating new knowledge which increases the efficiency of crisis teams.

This paper provides a conceptual model of CMTs performance by using "knowledge lens". Literature from both the domains is gathered which is then integrated to propose a conceptual model for increasing the CMTs' performance.

2. CRISIS MANAGEMENT TEAMS

Some historical crises included Hewlett Packard executive involvement, 9/11 terrorist attacks, recall of Sony batteries for laptops and spinach E-Coli contamination in California [9]. For last three decades, crisis management experts are focusing on improving creative decisions making [10, 11] but less attention has been paid for using the "knowledge lens" for creating and integrating knowledge within the teams. In such a turbulent environment, conventional ways of making

decisions are not sufficient to produce creative decisions. By organizational crisis means, "a low-probability, high-impact event that threatens the viability of the organization and is characterized by ambiguity of cause, effect and means of resolution" [10]. Creative decision makers have to face an extra ordinary tough situation in crisis like; 1) a rapid flow of information [12], 2) different stakeholders involved in many cases [11], 3) decision making time is limited [13], 4) crisis may be a surprise for the organization [14], 5) although time is limited but organization cannot afford to compromise on the quality of decision making [12]. Each of these situations make it challenging for the organization to generate optimal and efficient decisions. Creativity plays an important role in the organizational effectiveness and survival [15] which is a key concern in crises management. Creativity involves novelty, which means that it is impossible to generalize one decision on another context [16]. Creativity is defined as, "A creative decision is defined as a decision that is both a novel contribution and of value to a decision context. A novel decision is unusual, uncommon, unconventional or unique from past decisions" [17].

Crisis Management Teams (CMTs) are established in some organizations, which have decision making authority and responsibility in the time of crisis [9]. By applying simulations and other crisis management techniques, the team members try to develop strategies to overcome situations. According to Sheremata, "Crisis is a special type of problem for creativity"[18]. It is critical to find creative and acceptable solution for the crisis situations. Creative decision is required, when the existing solution does not meet the criteria [9] and definitely, in most of the cases new decision is required. Creative decision making involves making novel solutions. Looking for the novel solutions during the decision making process increases the potential of generating creative outcomes [9].

For generating creative decisions in crisis and working in such a crucial situation requires coordination among the team members. Complex tasks which are required to be completed rapidly demand for strong coordination among the team members [19]. "An example would be the coordination (integration) required between eight individuals on a large sailing boat to simultaneously change a foresail while rounding a mark in rough seas during a close race"[19]. To perform a task with low error rate and where there is a do or die situation, a high level of integration and coordination is required.

3. APPLYING THE KNOWLEDGE LENS

When new perspectives and theories are imported from one field of management to the other field, Amundson suggests a "lens" metaphor which can help in useful adoption of the concept [20]. The "lens" metaphor extends our understanding of the concept in particular field of study. In order to look at the theoretical body of crisis management, knowledge management is used as a "lens" as shown in the following figure 1:

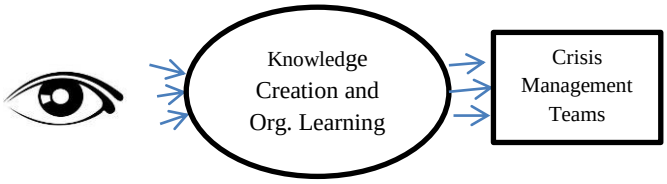


Figure 1

In order to import the concepts of knowledge management and organizational learning in the field of crisis management, author explains the SECI model, as suggested by Nonaka [7], knowledge integration concepts as discussed by Gardner [6] and learning organization phenomenon of Argyris [8]. After explaining these concepts, relevance and consistency of these concepts with crisis management team's performance is explained and conceptual model is provided on the basis of the whole discussion.

4. KNOWLEDGE CREATION

From last few decades, researchers were realizing that our society is moving gradually towards knowledge society [21]. Because of this shift, we are more concerned with knowledge for operationalizing the concepts regarding innovation and creativity. An organization that simultaneously deals with dynamic challenges of environment, not only needs to efficiently process information but also create knowledge and information [7]. Crisis management teams have to deal with diverse challenges, so they need to create knowledge (in the shape of unique solution) for their survival. In order to look at the procedure and process of knowledge creation within the teams, let`s understand the concept of knowledge and its kinds first.

4.1 Knowledge & Its Types

People have often used the words information and knowledge interchangeably but there is a stark conceptual demarcation among both the words. Dretske has provided a useful definition of both as, "Information is that commodity capable of yielding knowledge, and what information a signal carries is what we can learn from it [22]. Knowledge is identified with information-produced (or sustained) belief, but the information a person receives is relative to what he or she already knows about the possibilities at the source. In simple words, information is a flow of message and knowledge is organized and created with the very flow of information.

There are basically two types of knowledge, tacit and explicit, which take part in the process of knowledge creation. Polanyi guided towards tacit knowledge as, "we can know more than we can tell"[23]. Means knowledge, we explain in our words is just the tip of ice berg in relation what we actually know [7]. Polanyi categorized human knowledge in two broader categories; tacit and explicit. Explicit or codified knowledge is transferrable by using systematic and formal language, whereas tacit knowledge is hard to transfer using formal language because of its personal quality. It is mentioned by Nonaka with reference to Polanyi, "it "indwells" in a comprehensive cognizance of the human mind and body"[7].

4.2 Model of Knowledge Creation

Fundamentally, individuals are the basic elements for the creation of knowledge. Although, organization structure facilitate knowledge creation but without individuals, organizations cannot create knowledge [7]. According to Polanyi, commitment of an individual is a key attribute for knowledge creation. Hence, the commitment is considered as one of the most important factor that promotes new knowledge creation. Nonaka has further explained that, for commitment towards new knowledge creation, there are basically three factors involved including; intention of individuals, autonomy and environmental fluctuation at certain level.

Nonaka has postulated four models on the basis of an assumption that knowledge is created through a systematic dialogue between tacit and explicit knowledge (See figure 2) [7]. According to his model, knowledge is created through conversion between 1) tacit to tacit, 2) explicit to explicit, 3) tacit to explicit and 4) explicit to tacit.

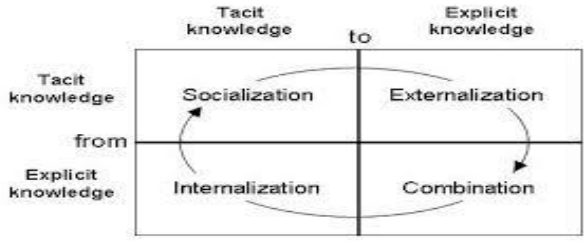


Figure 2

Firstly, tacit knowledge is converted through interaction between individuals. An important thing is, that this kind of knowledge is converted without language. Apprentice work with mentor and learning craftsmanship through imitation, practice and observation. In the second mode of knowledge conversion, explicit knowledge is exchanged and combined through a social process. The mechanism is facilitated by telephone conversation and meetings. The configuration of existing information through re-contextualization, re-categorization, adding and sorting of explicit knowledge will lead towards new knowledge creation. On the other hand, externalization of knowledge requires transformation of knowledge into comprehensible form which the other person can understand and internalization is the conversion of newly created explicit knowledge into tacit knowledge [24] which is also similar to the traditional notion of "learning" [7].

So, knowledge is created through interaction between tacit and explicit knowledge. According to Nonaka, "The interaction between these kinds of knowledge leads to the creation of new knowledge"[24].

5. KNOWLEDGE INTEGRATION AND RESOURCES

Weick and Roberts has postulated, "People in close relationships enact a single transactive memory system. Complete with differentiated responsibility of remembering different portions of common experience. People know the location rather than the details of common event and rely upon one another to continue their missing details that cue their own retrieval" [25]. The statement shows that in order to complete a complex task, a good level of coordination and integration of ideas is required because nobody has complete knowledge. People tend to use shared knowledge while working in group.

People need practice to perform a task with very low rate of error requirement, it is experiential [19]. Extent to which team members have worked together and familiarise with each other (relational resources), will increase the propensity of higher performance [4]. Team performance can also be increased by enhancing capability of knowledge integration [19]. Relational resources will help in improving the collaborativeness, efficiency and validity of team member`s ongoing communication, thus enhancing knowledge integration. Cramton states that group members develop a shared vocabulary while working together which enables them to not only understand each other but also increase the efficiency of exchanged information [26]. The shared vocabulary arises from shared experience will increase the probability of efficient knowledge integration. According to Berman, Down and Hill, "Finally, greater relational resources improve the collaborativeness of group communications, enabling more widespread participation and joint problem solving" [19].

Other than relational resources, diversified experiential resources gain value by combining them together and permit the ***creation of new knowledge*** [27]. Team`s experiential resources are linked with both; team [6] and firm`s performance [28]. More experiential resources help in knowledge integration. Team members may integrate the knowledge gained from past experiences and projects in creative way which can increase the current group`s information processing [29]. Even though team members have less or no relational resources, the work experience on similar projects may provide a valid compatible knowledge base that improves collaboration and helps in better knowledge integration [30].

6. ORGANIZATIONAL LEARNING

According to Argyris, "Organizational learning is a process of detecting and correcting errors [8]. Error is, for our purpose, any feature of knowledge or knowing that inhibits learning". Researchers have talked about four types of learning; 1) Zero learning, 2) Single loop learning, 3) Double loop learning and 4) Triple loop learning. Single loop and double loop learning will be discussed in this article as they are relevant to crisis management. Argyris explained single and double loop learning as, "When the process enables the organization to carry on its present policies or achieves its objectives, the process may be called as Single loop learning whereas double loop learning is capable of not only detecting errors but questioning the underlying policies and goals as well as its own program".

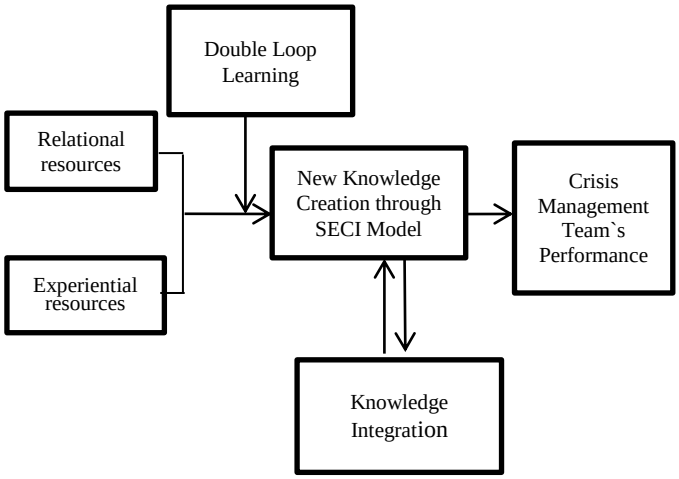
According to Argyris, although organizations are reluctant to adopt a double loop learning model but still if some organizations adopt it, there are several reasons for this adoption [8]. Argyris gave three reasons for adopting double loop learning, 1) crisis precipitated because of some event in the environment, 2) a revolution in the shape of management change or political issues, 3) crisis created by existing management. Two factors are related to crisis which enforces an organization to adopt double loop learning model. Furthermore, according to Nonaka, double loop learning is not a tough action rather it is a daily activity of a knowledge

creating organization where individuals are continuously involved in creating new knowledge by reconstructing existing frameworks, premises or perspectives [7]. His paper suggests that double loop learning is a natural, inbuilt and important characteristic for knowledge creation process.

7. PROPOSED RESEARCH MODEL

7.1 Model: 1

An exploratory investigation of increasing "Crisis management team`s performance" by using lens of "New Knowledge Creation" can be addressed through following model:



Model 1: A framework for increasing "Crisis Management Team`s Performance"

Literature provide evidences that relational and experiential knowledge helps in knowledge integration within a group and hence increased Team`s performance [4,6,29,28]. Resource based view of the firm indicated the strategic importance of intangible resources of the firm. Both "Relational and experiential" resources falls in the category of intangible resources. Social capital perspective highlights the importance of networks of personal relationships developed over time which provides bases for mutual trust, cooperation and coordination [31]. These intangible relational assets are valuable for the firm and potentially endow the firm with strategic resources for creating sustainable competitive advantage [32]. Extent to which people worked together and know each other (relational resource) will positively affect the team's performance. Relational resources increase collaborativeness, efficiency and communication [6], whereby enhancing the trust level as well as chances of team`s effectiveness. Relational resources emerged through interaction with the team members and interpersonal relationships help teams in increasing their creativity [33]. Similarly, relational resources of a team help in overcoming the barriers to select and generate creative solution [34]. Literature also suggests that whenever there is a need to perform a complex task with high proficiency and low error rate, relational resources play an important role in collaborating the activities and enhancing mutual trust [19]. Team`s experiential resources are attributed to team [6] and firm`s performance [5]. These kind of resources are more important for the firms where most of the organizational knowledge resides in their employees. Similarly, diversified experiential resources gain value and permit new knowledge creation.

Above mentioned model introduces a new dimension of "New knowledge creation" facilitated by double loop learning into the existing literature, specifically for increasing crisis management team`s performance. As every crisis is a unique event and CMTs need creative decisions in order to appropriately handle the crisis [10,11,9]. So, "New knowledge creation" is a vital characteristic of every CMT. Gray also provides a framework of knowledge management practices [35]. According to this framework, when there is a requirement to solve problem which is new or unique then new knowledge creation practice of knowledge management will be most effective (See figure 3). Furthermore, Nonaka, Toayana and Konna have mentioned knowledge integration as part of "Combination" (SECI model) where individuals are involved in combining, synthesizing and processing their explicit knowledge [36]. In SECI model, not only the new knowledge is created but knowledge integration process continues simultaneously throughout the new knowledge creation practice. In this way, CMTs create new solutions, integrate the knowledge and again involve in generating new solutions. As Crisis management is not restricted to just the resolution of crisis but it is a continuous process starting from crisis preparedness, to crisis prevention, crisis event management and then post crisis management [37]. After post crisis management, organization learns and then crisis preparedness process starts again. Similarly, new knowledge creation and integration will be an ongoing process.

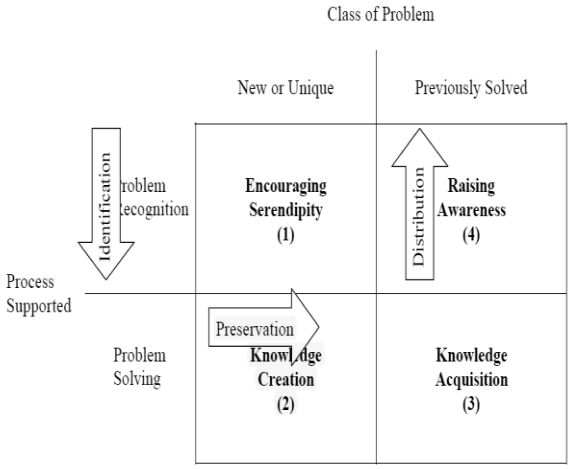


Figure 3: A framework for knowledge management practices (*Source:* Gray) [35]

Double loop learning is a built-in characteristic of knowledge creation process [7]. In order to create new knowledge and develop creative as well as novel solutions, teams are required to reconstruct existing processes, perspectives, frameworks, premises and beliefs. Reconstruction process is what we may name as double loop learning. Without using double loop learning concepts and in sticking with existing frameworks, it is difficult for the teams to generate creative

solutions which is most essential characteristic of crisis management teams.

Above mentioned literature provides a sufficient support for Model 1. It emphasizes the importance of creating knowledge by using double loop learning for better crisis team performance. In chaotic and complex environment, it is the fundamental responsibility of such teams to generate novel solutions. Knowledge creation model of Nonaka is a healthy source for creating new knowledge. Relational and experiential resources helps in socialization and creating shared vision for new knowledge creation.

Following propositions can be empirically tested for validation and generalizability.

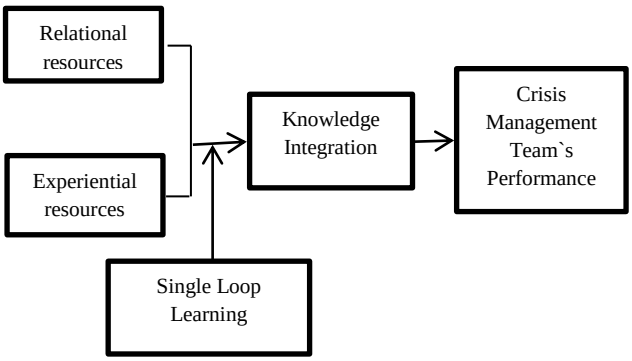
1st Proposition: New knowledge creation and knowledge integration have two way effects on each other.

2nd Proposition: Relational & experiential resources have effect on new knowledge creation and double loop learning mediates this relation.

3rd Proposition: Relational & experiential resources have effect on CMT's performance and new knowledge creation moderates this relation.

7.2 Model: 2

Model 2 is a pictorial representation of already identified relationships among resources, knowledge integration and team's performance. Firstly, Model 2 may have some benefits for ordinary teams but seems totally unfit for crisis management teams. Relational and experiential resources increase the cooperation, coordination and trust level among the team members but they cannot ensure the generation of novel decision which is most crucial for crisis management teams. Model 2 includes single loop learning framework which definitely focuses on current procedures and practices. As crisis requires non-programmed decisions, existing practices seem irrelevant in such situation.



Model 2

Hence, it is proposed that above mentioned model decreases the performance of crisis management teams. Model can be empirically tested for validity and generalization.

4th Proposition: Relational and experiential resources have effect on crisis management teams performance moderated by knowledge integration and mediated by single loop learning.

8. CONCLUSION

Creativity is an integral part of crisis management team. Team members need to generate creative solutions in crisis situation. Although this notion has been emphasized by many crisis management scholars but very less attention was given on how to generate creative solutions. Knowledge lens has been used to explain the creative solution of CMTs and how it can increase the CMTs performance. Hence, this paper has provided a framework for new knowledge creation for increasing CMTs performance. Nonaka`s SECI model has been used as a framework for new knowledge creation which is ensured through double loop learning process. It is proposed that group members having relational and experiential resources, when use double loop learning, will be able to create new knowledge which will ultimately increase CMT's performance. Conversely, group members having same resources, when using single loop learning and integrate their knowledge will decrease CMT's performance.

Future research can be conducted to empirically test the proposed relationships. Furthermore, this model provides a framework to the practitioner for designing the organization/teams accordingly. Ambidextrous organizational structure and middle-up down management style [7] is appropriate for generating novel solutions and knowledge. Practitioners can adopt the management style and structure for facilitating knowledge creation process within CMTs.

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