

## **Driver Factors Of Knowledge Worker Team Innovation**

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**Abstract.** In our well developed world today knowledge work and teamwork is becoming crucial particularly in innovation oriented economies. Innovation based organizations, which are called as knowledge intensive firms are becoming well aware of the importance of new knowledge creation. These firms are different in many ways from traditional firms and employ knowledge workers who are well qualified experts. These workers are responsible for innovation through working in teams. In literature, there is a growing interest on innovation related team processes, which are seen as significant for teams to obtain their targets. The team climate inventory (TCI) approach introduces team level psychological safety, support for innovation, shared objectives and task orientation among team members as innovation related team processes. Although these determinant processes of team-based innovation may be relevant, new findings in innovative group contexts indicates the importance and necessity of additional innovation related processes for knowledge worker teams. According to recent claims and findings creative abrasion, cognition, trust development, absorptive capacity and communication in teams may also have relevant effects on innovative performance. Therefore, this paper is a theoretical review of team level innovation and it will introduce the additional innovation related processes that have been unearthed in recent research.

**Keywords:** innovation, knowledge workers, team processes, review

### **1. Introduction**

In today's world, with the effect of globalization and technological developments the borders between countries particularly in terms of business are disappearing, competition is fierce and innovation is one of the core strength factors for many organizations operating in complex environments [1]. Hence, in many situations organizations are encouraged to benefit from teams rather than individuals [2]. Since in present day turbulent working environments needs collaborative forces to be more effective.

West in ref [3] defines teams as a group of people who perform tasks to help organization to reach its aims. Teams are used for various tasks in organizations such as to increase productivity, to sell products, to do a research or to innovate. The main focus of this paper is the innovative role of the teams.

In present day, the competition among organizations is fierce. New developments in knowledge, society and technology influence the way organizations operate. Becoming productive and selling products that have high quality are still important drivers for success yet not enough. In today's new era of innovation organizations are expected to become more adaptive, innovative and surprising for the market they compete in and for the customers they serve. As a result more and more organizations are giving their attention to new knowledge creation and product or service development. This type of transformation requires different management philosophy and this leads to the rise of new type of organizations called knowledge intensive firms (KIFs) [4].

Knowledge intensive organizations are generally the ones who introduces new type of thinking, doing things in to the market. Often they are the ones who leads the new product development and innovation. The main feature of these organizations is their workers. KIFs attract experts and knowledgeable people who are

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scarce sources in the markets. In literature this type of workers are called “knowledge or gold collar workers”. New type of knowledge are owned, captured and managed for new knowledge creation and innovation. Thus knowledge workers are gold collar workers for knowledge intensive organizations. These workers are generally work as teams and share their knowledge together to rise above their individual selves. They discuss, they conflict and they come with creative ideas to implement them for innovation.

The nature of innovation involves uncertainty and complexity. Thus the main task of knowledge workers is to solve complex problems and deal with ambiguity. More to the point, management's knowledge is not sufficient and not comparable with these expert workers and this gives high level of autonomy to the knowledge workers. In other words, they often work in self managed teams which can not be micro managed, controlled or understood directly by management. In fact, some academics even argue that the real power in these organizations is in the hands of knowledge workers rather than the management itself. Additionally, management`s role is to facilitate and improve the working conditions of these workers.

This paper is a theoretical review and it focuses on the team processes that drive innovative performance of knowledge worker teams in innovation driven knowledge intensive organizations. In literature, there is a growing interest on innovation related team processes and there are some studies that show various process elements which have an impact on teams` performance. The team climate inventory (TCI) approach, introduces team level psychological safety, support for innovation, shared objectives and task orientation among team members as innovation related team processes. Although these determinant processes of team based innovation may be relevant, new findings in innovative group contexts indicates the importance and necessity of additional innovation related team processes. Creative abrasion, cognition, trust development, absorptive capacity and communication are the ones that are highlighted by scholars and these additional processes may also have relevant effects on innovative performance of knowledge worker teams that are operating in knowledge intensive organizations. Therefore, in this paper the key drivers of team level innovation in knowledge intensive context will be examined in the lens of recent developments in business oriented research.

## 2. Driver Process Factors for Knowledge Worker Team Innovation

Team Processes, refer to mutual transactions of team members. Knowledge sharing, member participation and support level can be given as examples to team processes [5]. In this part the processes (driver factors) that predicts team innovation in knowledge intensive context will be examined. The first four factors are adopted from TCI model which is considerably recognized by researchers studying in team innovation field. In addition to these factors 5 new process factors will be introduced for the aim of creating elaborated and updated mode which is based on the recent developments in the field to better understand team innovation in knowledge intensive organizations operating in postmodern business context.

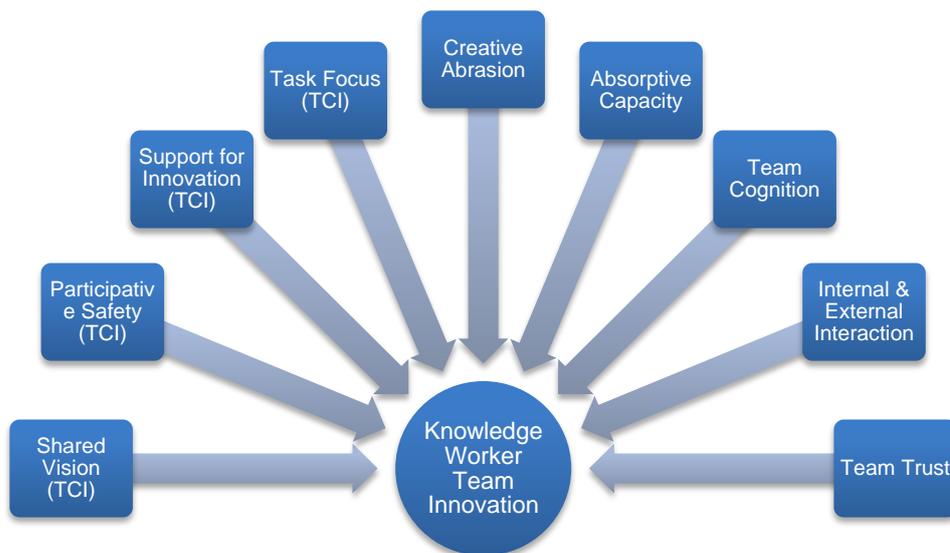


Fig. 1: Model of Knowledge Worker Team Innovation

## **2.1. Shared vision**

Creating a vision for organizations, work units and teams is seen as crucial for the success of a particular actor. A solid and proper vision is a strategic element for determination of priorities, targets and objectives of the organization. This is also valid in teamwork. An explicit vision which is seized and shared by team members is found as a fostering factor for team innovative performance. In a study of 418 project teams Pinto and Prescott [6] found that explicitly determined vision is the main factor that has an influence on team innovation. An anti-solid vision which fails to be acknowledged by members may easily create conflicts and decrease the level of focus of team members on the targets. What is more, with a repudiated vision the motivation levels of the members to accomplish tasks can also be questioned [7].

## **2.2. Participative safety**

Participative safety refers to the participation level of team members in team processes and how members feel psychologically safe to propose new ideas and to improve ways of doing things [8]. Team members' participation and commitment is crucial for a team to achieve its goals. During decision making or idea generation processes, participation of all individuals is seen as crucial to be able to meet diverse perspectives and creative ideas. It is also found that participation fosters integration among team members [9]. In research, there are many supportive findings regarding the importance of safe participation in various sectors such as health care, TV Programme production industry, top management teams, to name but a few [10]-[12]. To this end, high participation in teams may create cohesion and less resistance to change that will help the team to be more innovative. What is more, feeling safe and understood by others motivates team members to share their ideas and knowledge, which are also crucial for idea generation and implementation [13].

## **2.3. Support for innovation**

Having been understood by other team members and feeling comfortable to share ideas with the team are crucial factors for successful innovation. However, research also suggests that, although listening and understanding what others say are important, individuals also need to support the ideas shared by members. Otherwise, it will be really difficult to implement the ideas generated without support. Therefore, particularly on the process of moving from the creativity stage to the implementation stage of innovation, support of team members plays a bridge role among these two vital stages. Research also suggests that groups in which new ideas are considered in an effective manner rather than being ignored or rejected are more likely to be innovative [14]-[16].

## **2.4. Task focus**

Task focus is about the team level of commitment and orientation to the tasks so that the team can achieve the highest possible performance [8]. There are factors such as groupthink and a high level of cohesion which may inhibit the group's innovative performance. Thus, it is highly essential for the team to be focused on the tasks and to have a common concern about the responsibilities of the team. In their research, Bain and his associates [17] found a significant relationship between task orientation and innovative performance of research teams. Additionally, in his research in 2001, Michael West underlined the importance of task focus in terms of being reflexive about tasks. Having been committed to achieving the targets, the team members may have a tendency to develop critical appraisal and evaluation on their task performance, which was found to be considerably important for the innovative performance of the teams [18]. To this end, it can be claimed that a high level of orientation to the tasks will motivate the team to find elegant solutions to complex problems and to reach effective ends to make innovation happen [19].

## **2.5. Creative abrasion**

Creative abrasion or task conflict is known as a crucial determinant of team innovation. Conflict refers to contention of interests and perspectives of the individuals involved in and it is found in the nature of human interaction. Although it is often perceived as a negative term for the interactions in various contexts, recent research argues that this may not be the case when conflict is related to the tasks. Lately, some researchers stress the importance of minority dissent in working groups. De Dreu and De Vries [20] claims that groups in which divergent ideas are not tolerated or ignored are likely to be the less innovative. Additionally, in a study

in 2001 West and De Dreu found that moderate level task related conflict has a considerable influence on team innovation. Overall, it can be said that challenging the status quo and generating different ideas can enhance creativity and strengthen the vision of the team [21]. More to the point, if members of the team put their efforts to solve the misalignment on task related actions they may come up with new ideas and contributive solutions.

## **2.6. Internal and external communication**

In today's global and fast moving world effective communication has become the key element for organizations and work groups. Information is more reachable and shareable than ever and communication is seen as a major source of innovation by various researchers [22], [23]. With the advance in technology team members can capture, manage and share the knowledge with other members of the team. However this type of internal communication may not be sufficient for the knowledge worker teams which deal with ambiguity. In fact, knowledge and skills of the members may not be relevant or satisfactory for the problem encountered by knowledge workers. At that time, team needs to use its social capital (network and lobbies) to find relevant knowledge to overcome the obstacle. As a result interaction with other actors who are outside one's own team or organization can be crucial. Many academics agree with this approach and provided supportive correlation between external communication and innovation [24], [25]. What is more, Ancona and Caldwell 1992 found a strong support regarding the relationship between external interaction and new product knowledge worker team innovative performance.

## **2.7. Absorptive capacity (Team learning and adaptation)**

Absorptive capacity is the level of awareness regarding new developments in outside world and stage of capability to capture and apply this freshly developed information. In team context it can be defined as ability of the team to recognize the value of new external information and reach innovative ends through capturing and applying this new type of information [26]. There are 3 main dimensions of team learning and adaptation through absorptive capacity. First dimension is labelled as "*evaluation*". In this process members of the team assess the external knowledge which may create strategic value to target for assimilation. The second dimension named as "Assimilation". This phase is about acquiring the valuable external knowledge and developing a shared understanding on it. Final stage is named as "exploitation". Through exploitation team members apply the knowledge to make the innovation happen [27]-[29]. Absorptive capacity is one of the crucial success factor for organizational learning and innovation scholars found significant relationship among these [30], [31]. Recent research also found a considerable impact of absorptive capacity on team level innovation in knowledge intensive R&D context [27].

## **2.8. Team cognition**

Team cognition defined as a cognitive activity among members of the team and it emerges during interactions of the members to accomplish shared goals [32]. These interactions assist the group members to develop a shared understanding through using their cognitive skills that allow them appreciate and make sense the technical knowledge of others [33]. It is argued that in cross functional teams the members who has wider intellectuality and understanding capabilities (t-shaped skills) can facilitate the development of shared cognition within the team [34]. Without team cognition knowledge sharing among team members can be restrained. Research shows that shared cognition and understanding is crucial to share deep and tacit knowledge that often leads to new knowledge creation and innovation [35], [36]. Hence, team cognition is particularly relevant and crucial for knowledge worker teams that deal with novel projects and complex problems.

## **2.9. Team trust**

Existence of a trust among team members is highly central for the effective interaction and knowledge sharing within the team. It is stated that high levels of trust is necessity for the team in pursuit of tacit knowledge flow and learning that can lead to innovative ends [37]. In literature there different trusts types developed for the organizational units and these depends on the context that these units operating in. It is argued that the teams working in knowledge intensive contexts require swift trust which is often relevant for temporary project teams working on novel tasks [38]. This type of trust, is generally builded in a quick

manner among the members who are first time together [37], [39]. It is argued that the interpersonal dynamics may fall short for trust development in temporary groups. Instead reputation, characteristics and attitudes of the members map play a crucial role. Reputation of the skills of individuals that are relevant to the their roles in the team may help increase credibility and trust among others. More to the point. characteristics of the members as extravert or agreeable that foster communication which influences quick formation of trust can play an important role for the development of swift trust. Finally the attitudes of the members towards each other can be vital for the aim of building shared objective and marching to that objective [38], [40], [41].

### 3. Conclusion

To sum up, during the recent decades there has been significant change on the things that organizations are responsible to do to stay alive and be competitive in many sectors. With these changes creativity and innovation become the key determinants of competitive advantage. As a result new type of innovation oriented organizations started to evolve and they employ knowledge workers and create conditions for these knowledgeable experts to work as a group to introduce cutting edge products, services or new way of doing things that can give organizations a solid advantage in the market. Therefore, in this paper, based on new developments in innovation and knowledge creation research, current drivers of team innovation in complex environments were addressed. Aforementioned team processes are the ones that play a key role in particularly knowledge worker team innovation. To this end, Innovation oriented new product development teams, research teams, cross functional novel project teams etc. need to establish these driver factors to reach innovative commercial ends.

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