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Significant Attributes and Challenges Related to Cross-Functional Team Communications

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Majid Ali

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Abstract

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Title:	Significant Attributes and Challenges related to Cross-Functional Team communications
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Purpose

The purpose of the research work is to investigate the importance of the communication in the cross-functional teams and in what which communicational tools provide better convenience of communication in cross-functional team members.

Methodology

An empirical study including the data collection from the interviews conducted from the participants working in cross-functional teams. Qualitative approach has been adopted to understand the communicational attributes in the cross-functional teams. For the analysis both deductive and abductive approach has been used. With the help of theoretical framework and empirical data, conclusions drawn for better understanding of the concept.

Findings

The author has divided the search in two main segments, communicational effects on cross-functional team performance and effectiveness of particular communicational tools used by team members and team leaders. Empirical findings shows that without proper communication, cross-functional team are less tend to perform well to achieve set goals as well as face to face communications are more effective than other communicational tools.

Research limitations

The research work is limited to Scandinavian countries. Organizational communicational structures are not studied due to time factor. Other limitation of this research work is effect of cultural differences on communication.

Implications

The research work provides deep understanding of the different communicational effects on cross-functional team performance. The choice of communicational tool and proportional importance for the team members will help managers while selecting the tools of communication with the team members.

Originality / value

During the literature studies, author determined that there is potential of research for the communicational tools used in cross-functional team communications. The social media is taking over the traditional communicational tools which provide value for findings.

Keywords

Cross-functional teams, communication, communicational tools, social media effects.

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1 Introduction

Rapidly changing business markets raise an urge of tangible organizational structures. Organizations which are adoptive, rapid and flexible towards market scenario capture their share quickly than competitors. Construction and deployment of teams is not new in organizations and proven significantly successful. Nowadays, organizations while hiring consider team player skills as important part of credential. The concept of cross-functional teams operating under a cross-functional leader is becoming trendy and uprising because of its effectiveness (D'O'Brian, 1994). Cross-functional team sometimes misinterpreted with project team while there is silver lining between the two concepts. The difference between cross-functional team and project management team is that the people working in cross-functional team have functional duties in their specific departments along with the work duties in cross-functional team. Whereas, project management team is mostly selected people from various department who work on given project provided by a goal to achieve (Cobb, 2012). Long before organizations contemplating cross-functional teams in supply chain management, this concept has been used in the product development process to reduce the process time (Henke et al., 1993). Cross-functional teams perform integral roles in functional integrations which create customer value and profitability. Organizations mostly driven by two approaches, product oriented and customers oriented. Organizations with focus on customer values and demands are more successful and cross-functional teams perform right niches in this scenario (Anderson, 2000). But, alongside good benefits of cross-functional teams, there are reports of bad implementation of this concept. For instance, if the cross-functional team lack in communication or an unclear goal and task diminish the outcomes. In this thesis, author is going to investigate the challenges that are associated with cross-functional team's communication significance and factors that affect communication between the team members as well as tools of communications for cross-functional teams. A synchronized cross functional team can achieve remarkable task within given time frame. Patrick Lecioni quotes

“if you could get all the people in an organization rowing in the same direction, you could dominate any industry, in any market, against any competition, at any time”

Since cross-functional teams are made of individuals with different technical knowledge and background skills it become essential how the team co-operate to create an atmosphere of common understanding and knowledge distribution. Knowledge is the base of all the technological advancement. Historically, it has been recognized that sharing the knowledge leads to high performance in the projects but at the same time it is not an easy road to find a precise way of sharing it. Some time it is worth sharing the knowledge but to accredited knowledge, there must be some tools to define the authenticity of the knowledge. It has been reported that if there is a big knowledge difference between the cross-functional team it can actually impede the functionality of the team outcomes (Majchrzak et al., 2011). It implies that the real importance is not to neglect the expertise and knowledge difference whilst formations of the cross-functional team. Especially, in case of fast changing global business scenarios, organizations which tend to set up their business with adopting options such as strategic cost accounting, total quality management, cross functional teams

and improvements in internal functional integrations (Anderson, 2000). The requirement of knowledge sharing can be dependent on how the cross-functional team communicates. For instance, the tools of communication and methods to convey message from top to bottom and within team rely on the organizational structure and relevant work approach. In this thesis work, the focus will be on the communicational attributes and communicational tools of cross-functional team as well as how team leader influence the communicational environment within team.

The main question arose during the literature studies was, what are the main underlying communication mechanism of the high quality knowledge sharing. It has also been determined during the literature studies that not so much efforts has been done to find out the antecedents of the knowledge sharing via internal communication of team (Ghobadi and D'Ambra, 2013).

Supply chain is new concept in organization and it is sometimes mixed with logistics. But, in broader scenario supply chain management is not just logistics but to covering all the business areas of the organization. One aspect of introducing cross-functional team in supply chain management is to improve the overall supply chain. Since supply chain is a very wide area covering multiple departments at same time, therefore for the improvement of the supply chain, cross functional team should be comprised of individuals from different departments. Since these team members are experts from different functional units and with right platform of communication the whole supply chain can be improved. A healthy coordinating cross-functional team helps make it possible to build better products, sell more efficiently, provide expert support and eventually make more money. The communication between team members imparts a significant role because cross-functional team ought to share the information to improve the existing supply chain system. Organizations which recognize the importance of communication between cross-functional team members provide necessary grounds of communications as well as appropriate tools of communication achieving new targets (Anderson, 2000). It has been reported that beside cross-functional team reputation of high goal achievements, the problems of status difference among team members can influence the outcomes. Cross-functional team can be comprised of managers as well as line engineers. This hierarchal difference between the team members can generate an atmosphere that hinder the communication since managers have powers such as promotion, bonus and KPIs (McCalman, 1996). Team leaders significantly promote and improve the communication between team members.

This thesis is subcategorized in two segments, communicational effects and communicational tools. For data analyzation of first segment a deductive approach is used. From literature review, author found out that although a lot of research work is available on cross-functional teams but not so much research has been done on communicational tools and their effects. Due to lack of availability of literature an abductive approach will be used for the analysis of the results. For the purpose of data collection, total six numbers of interviews have been conducted from the participants working in cross-functions teams. Out of six interviewees, two participants work as team leaders which provide relevant information about the team leader contribution towards team communications. The collected data is then compared with the existing theories and available previous researches.

1.1 Background

In past, the main trend to hire the employees revolves around finding applicants competence in a specific area and assigned the duties related to specific restricted one functional area. Due to permanently changing competitive business environment, above mentioned notion of traditional firm strategies need to alter for the course of attaining sustainable profitability which increase the need of cross-functional teams (Anderson, 2000). One research work reports the findings that supply chain management is the best way to put together all the department of the organization to sit down together and enabling the chances of one team organization psychology (de Abreu and Alcântara, 2015). In supply chain management, it is becoming a noticeable trend that the organizational management creates teams which are composed of members from various departments work on single or multiple task. These teams members functions individually in different departments but also work together for the achievement of the common goal.

The value realization of cross-functional teams start providing results if all the members of the team utilize their functional knowledge and experience in the right way with the focus on knowledge sharing concept (Shahla and John, 2012). Whilst going through the extensive studies it has be recognized that cross-functional team has more social affiliation, affection and psychologically high comfort level towards their own functional departments than working in the cross-functional team (Pinto et al., 1993, E. Randel and Jaussi, 2003). That is one of the challenges that could be considered while building a functional and productive cross-functional team. The realization of competitive or corporative atmosphere is also very important while utilizing a cross-functional team for certain projects (Shahla and John, 2012). Team members face barriers of communication if team has a climate of competition rather than cooperation and coordination. One example of how cross-functional team increases the value in the purchasing department in supply chain management is Harley Davidson Motorcycle Company. The report shows that team from different functional departments perform really well as they know precisely what, where, how much and when different functional products needed and team adopt it as a way of their working life (Brunelli, 1999). When it comes to deliver the satisfactory results in a short time period, cross functional teams have been reported to provide the excellent results in shorter course of time. But along with that come the leadership issues to handling the team of people who have different background of education and expertise (D'O'Brian, 1994).

Since cross-functional team consists of individuals from various departments who have different skills and educational background which can overlap the point of interests and general approach. One problem that arose in cross-functional team is the flaw of right communication and to get heard by team members (Proehl, 1996). In the past, not much of the research has been done on finding the problems related with communications and what could be the right approach of communication between team individuals. Each member of the cross-functional team has different knowledge as the team is composed of the individuals comprised of perpetual skills from different functional areas of the organization. The importance of the knowledge sharing cannot be neglected. The concept of deploying cross-functional team is to create a unique cloud of knowledge directed to solve and achieve the goal. With knowledge sharing between team members making them enable to see one objective

from different angles and enabling them to respond to the complexity of task with more cognitive way during the project process (Szulanski, 2000). Although, it has been reported that knowledge sharing within team members of cross-functional team is not appealing which can be because of psychological and social bounding of team members to their respective functional departments (Sethi et al., 2001, Pinto et al., 1993). Shahla and John, 2012 have studied and suggested that there are two aspects of knowledge sharing; cooperative and competitive. Cooperative knowledge sharing comprised with communication and knowledge sharing within team individuals which at the same time provide competitive edge for the possessor. Sometimes cooperative knowledge sharing creates an environment of competitiveness and impairs the agility of cross-functional team. The communication in cross-function team have utmost importance as the team means to work on given task which they have to discuss and finding solutions is not possible without sharing each other's views based on their skills. The lack of communication appears to be more in new teams compared to older team. D'O' Brian (1994) described the causes that decline the communicational level in cross-functional teams as; common interest, cultural background, educational level and difference in point of view etc. Team leader provide a facilitator character in team communication and has profound role in team performance.

1.2 Problem Statement

As mentioned in last section, cross-functional teams are proven very useful in global organizations and provide better results in supply chain management but there are rise of problems at the same time when people work together on a task. Whilst there are several challenges that should be consideration for the better performance of the cross-functional team some of them are related to communications between the team members. When a team is comprised of members from different functional departments, communications between the team members become more crucial for team outcomes. There are many situations/reasons which can create hurdles in the communications between team members. Factors such as, departmental integrity, social skills, cultural differences language barriers or hierarchal differences could be considered as some barriers which reduce the communications between the team members. One way of overcoming some of the above mentioned barriers can be; selection of the relevant competence in people who are flexible enough to work in a team who are able share the same values and absorb other team member suggestions and opinions, hierarchical aspects, educational and background skills. Communication within the team has a crucial impact in the performance since all team members have to put down their knowledge on the table to work together. From the literature review, it has been observed that big ambiguity lies between the team about who is going to lead and why he or she has right to lead. One problem of cross-functional team could be the feeling of the team members that his or her voice is not heard and appreciated. Mostly, a diversified cross-functional team appears to show less results compared to anticipated outcomes. Factors such as demography, social interaction, cultural background, psychological behavior, tactical approach and functional integrity can play an important role while evaluating the cross-functional team performance (E. Randel and Jaussi, 2003).

The way in which cross-functional team communicates can affect the communicational attributes with teams. Communicational tools have significant importance in cross-functional team since some tools provide better platform than others. But the choice of selecting communicational tools differ and relevant to organizations structure of communications. Unappropriated communicational tool can reduce the flow of communications between cross-functional teams.

If communication is really effecting to big deal to cross-functional teams then understanding the tools of communication can be viable. This raises the importance to determine what are the tools of communications and understanding of particular attached significance to each tool?

1.3 Research Purpose and Questions

There are many factors that are contributing in the outcomes of cross-functional teams. Communication ought to be a focusing variable that effect motivation and working environment of the team. Effective communications between team members not only provides a channel to solve the problems but, to increase the confidence level in the team members. Although, effectiveness of communication is high but at the same time it is not easy to communicate within team due to differences such as, cultural, functional integrity, educational background and hierarchy. Purpose of this thesis is to determine causes that increase or decrease effectiveness of communications in cross-functional teams as well highlights what are the challenges related to communications. This thesis also aimed to investigate communicational tools mostly used by team members and which tool provides better channel of communications, selection method of tools and which communicational tool constrains the communication between the cross-functional teams.

Following are the questions that will be investigate in this thesis work.

Research question 1: What are the communicational effects on the cross-functional team

Research question 2: What kind of communication tools mostly used in cross-functional team and their effectiveness

Research question 3: How does hierarchy differences between team members effect on communication of cross-functional team

1.4 Delimitations

Although cross-functional teams are used in vast areas of organization but there are different challenges for cross-functional team in every different functional area. The numbers of interviewees are restricted due to time factors as well as the study is conducted in Sweden which reduced to cover only one geographical location.

2 Frame of Reference

In this section author build up the concepts of cross-functional teams, communications and related factors of communication.

2.1 Cross-Functional Teams

Glenn M. Parker narrated in his book “Team player and Teamwork” that; by the end of 1980s, team buildup got promoted more than just nice idea and beginning of the realization of idea’s effectiveness in an organization’s business mostly contributed by the behavioral scientists specially in North American region.

The definition of cross-functional team from the Dictionary of Human Resource Management is; “A group of employees who are from the same level in the organizational hierarchy but whom have specialist skills to offer. They are brought together as a team to accomplish a specific task and are then disband” (Edmund and Mike). Or cross-functional team composed of members with complementary competence chosen for the achievement of a common goal and accountable for the team’s success (Katzenbach and Smith, 1993). By the start of 90s decade, organizations started to experimentation of deploying cross-functional team approach for the quality production, value added services to customer and cost effectiveness. Once the idea of team work became popular and organizations start to build up teams it came to recognition that to create team from different functional department of organization (now known as cross-functional team) rather than from the same functional department (Parker, 2003). These teams compose of members from various functions departments started to show results and became famous in organizational strategical decisions making (Anonymous, 2003).

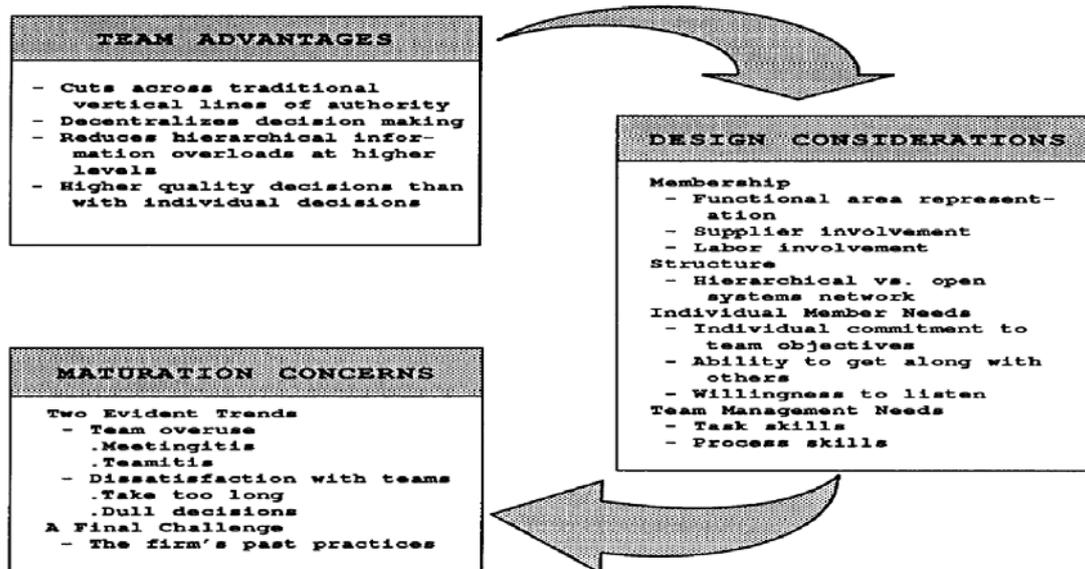


Figure 1; Pros and corn of cross-functional team (source: (Henke et al., 1993)

Figure one depicting the main realization steps that are significantly important in cross-functional team.

2.1.1 Considerations while Team Selection

From the literature review, it has been realized that there are several factors that have been suggested to consider in the formation of a successful team.

For the desired outcomes of a cross-functional team it is important what kind of considerations have been made while the formation of a team. Capabilities and skills of individuals in a team set the boundaries of the cross-functional team. Right people at the right time and right place generate desirable results. There have been proposed criteria of team selection and how a team should be built. For instance, it is suggested that in a cross-functional project-based organization, it is ought to first identify teams' capabilities by identifying all the individuals' project management skills. Although it is becoming hard to pick out appropriate individuals but the process with time becomes mature and provides people with cross-functional aptitude (Hsieh, 2010). A good blend (fitting in of individuals) of resources could provide sufficient effectiveness of project operations. Following considerations should be set for a successful cross-functional team (McDonough, 2000)

- Appropriate project goals
- Empowerment of the team with decision making power
- Assignment of appropriate human resources
- Creation of a productive climate

Two main types of problems appear whilst creating a cross-functional team; first is selecting the right person and second is selecting the appropriate team. Assessment criteria defined by the organization is a big advantage whilst selecting the team. There are numbers of models that have been defined by researchers such as the analytical hierarchy process (Shi-Jie and Li, 2004), heuristic method (Fitzpatrick and Askin, 2005), the Grey decision theory (Tseng et al., 2004) and mathematical model (Chen and Li, 2006) to help pick up the right personnel for the right team. One of the models by (Baykasoglu et al., 2007) defined a fuzzy model for the suitability values evaluation and shown in picture 2. This fuzzy optimization model is based on C++ computer program developed to experimentally propose a model. The model based on ratings and weights of the candidates are considered as fuzzy quantities and their characteristics as linguistic variables and triangular fuzzy numbers.

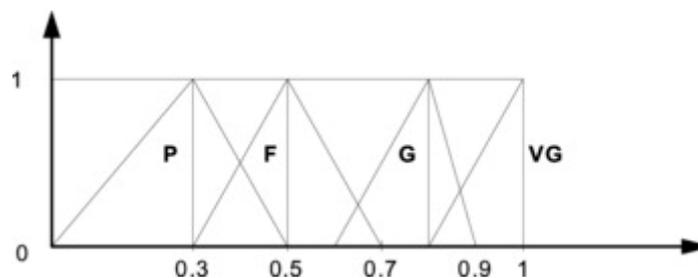


Figure 2; Membership functional criteria in fuzzy model for the selection of the candidates

In the figure 2, P is for poor, F for fair, G for good and VG stand very good.

To avoid preference ambiguity, candidates with higher assessment grades should be picked with corresponding algorithms to select a candidate. (Hsieh, 2010, Chen and Li, 2006, Baykasoglu et al., 2007)

2.1.2 Management of Cross-Functional Team

Although cross-functional teams have been proved very successful in unlocking innovations, productivity and growth as well as efficiency increment but these cross-functional teams are more difficult to manage than regular functional teams. From the start of the project if team leader established of a vivid vision and set the desired objectives then it gives an ease of managing the team. Provided with that, the team leader role also evolve as the project proceed (Stoller, April, 2014). The key to successful running a cross-functional team is to create atmosphere of trust and respect within team members as well as promoting information sharing with the members (DeCarlo, 1999). Since, cross-functional team is composed of the members from different functional areas of organizations (unless organization is itself a project base) and specific members have their own responsibilities along with working in cross-functional team. This dilemma of responsible of different assigned duties could create a dedication hindrance of team members towards cross-functional project objectives. The encumbrance of responsibility can be overcome by creating an environment that every member takes the responsibility of project outcomes not just one member and off course the credit of success. Promoting the creativity climate in the cross-functional team keep the interest alive in the team members (Bunduchi, 2009). Without commitment of members toward outcome of team it is hard to achieve the set goals for the cross-functional team. Creating a desire to participate in team progress and confidence of success in team members are the two of many points which a successful team leader focus on (DeCarlo, 1999).

2.1.3 Success Factors of Cross-Functional Team

Cross-functional teams have earned the trust of management as a very effective approach especially in project base companies and innovative organizations relying on their product developments. But there are many factors that influence overall success of cross-functional team (McDonough, 2000). A recent research shows that companies are using cross-functional teams 70% to 75% of the time which indicate the value of this concept (Cooper and Kleinschmidt, 1994). This high number of cross-functional teams in organizations shows the importance of cross-functional teams but success ration depend on many factors. Success factors also change with respect to the cross-functional team deployment. For instance, project type, organizational structure (small, medium or big), supply chain catalog and kind etc. It is reported that contribution from team leaders, senior managers and project resources are very important for the success of the cross-functional team. Cross-functional team success can also be related to the particular circumstances and perspective providing it hard to determine exact success parameters (Henke et al., 1993). Some researcher reported that more the functional diversity of cross-functional team more chances the team will be fall into category of negative performance whereas some of them related functional diversity as one of catalyst for project (Ancona and Caldwell, 1992, Zirger and Hartley, 1996). In available literature discussing success of cross-functional teams, researchers focused to understand the success factors of cross-functional team with respect to two dimensions; one is team and organizational oriented and second one is management of the cross-functional team. Nevertheless, with respect to first aspect of success, there are four factors (without the management consensus) can be related widely with the success of the cross-functional teams and they are; project goals, empowerment, organizational climate and human resources (Pinto et al., 1993, McDonough and Leifer, 1986, McDonough and Barczak, 1991, Thamhain, 1990).

With respect to management aspect, the success factors can be team leadership, senior management support, team champions, cooperation, commitment, ownership and respect (Brown and Eisenhardt, 1995, Sang-Lin, 1993, Thamhain, 1990, Zirger and Maidique, 1990, Markham and Griffin, 1998, Etlie and Shrivastava, 1996, Katzenbach and Smith, 1993). It has been recognized that involvement of team leader more than senior managers and champions implies more positive effect to team performance than others. The ability of cross-team members to intercede immediately during conflict arisen contributes to overall success of the team. A model of proposed success factors on every step of the project is shown in the figure below.

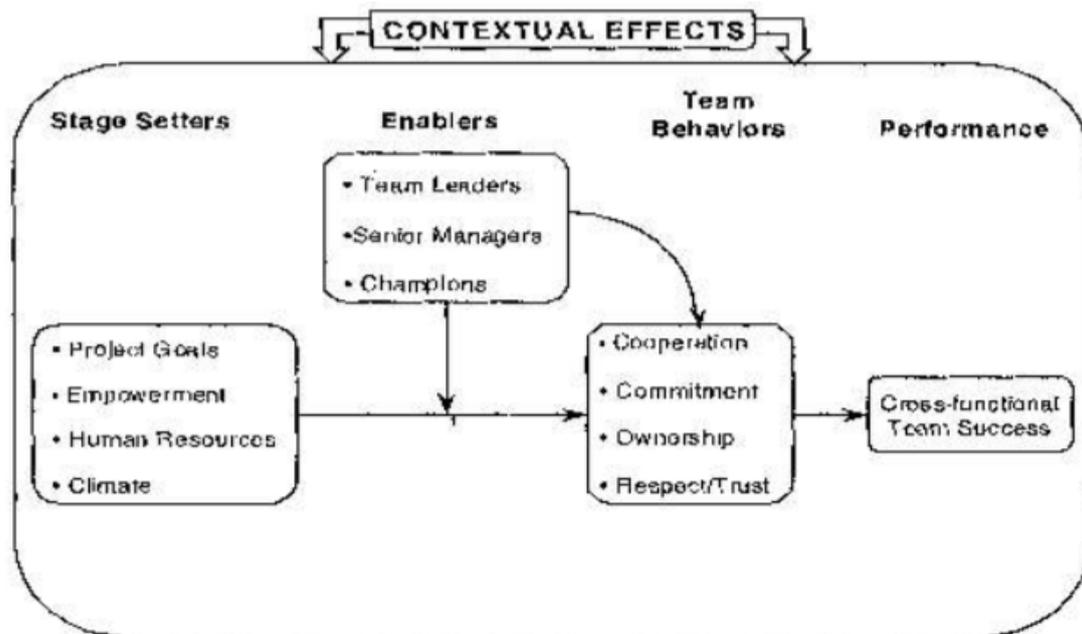


Figure 3; Stages of team behavior and cross-functional team success step wise (source: (McDonough, 2000))

2.1.4 Communication Significance among Cross-Functional Team

Significance of communication cannot be neglected in a cross-functional team. With proliferation and modern communication tools, it has been recognized that more and more geographically diversified cross-functional teams are formed in last decade. Communication is the one significant way for the information exchange between the team members (Darawong, 2015). The promotion the trust in geographically diversified team can be achieved with more communication between the team members (Zolin et al., 2004). It has been reported that two viable means of communications within teams formed within new service development are; formal team meetings and informal cross-functional communication (Boerner et al., 2012). Formal team meetings are composed of organized and planned platform of communications within team members which enhance team cooperation and task model. Whereas, informal cross-functional communication are more spontaneous and interpersonal communication in the team (Boerner et al., 2012). Whilst, both means of communications have pros and cons such as formal team meeting trigger knowledge integration but hinder knowledge generation and vice versa in case of informal cross-functional communication. Cross functional team with functional diversified members and with proper communicational approach able to generate creativeness and innovational solutions for the projects (van Knippenberg et al., 2004). This implies that functional diversity can only be promoted with cross-functional communication within team members (Jackson et al., 2003). Knowledge generation promotes with cross-functional communications which may be side advantages of task conflicts created between team members during informal communications. From the literature studies the realization of many variants of communications characteristics appears which considered viable. In this research work author covered the three most discussed dimensions; frequency, quality and formality of the communications.

2.1.4.1 Communication Frequency

The amount and rate of communications that are exchanged between the cross-functional team members define the frequency of the communications. Researchers have concluded that, the rate of satisfaction, involvement and commitment of team members increased with the amount of communication between the team and proportionally decrease with lack of communication frequency (2008, Johnson and Lederer, 2005, Thatcher and Zhu, 2006). This peripheral situation of lack of communication can be overcome with the involvement of the team leader and his/her contribution to promote more internal communication between the team members (Kacmar et al., 2003). Frequency of the communications affects with the dispersion of the team members *i.e.* more the team members apart from and not under the same shed more likely results in decrease of the amount of the communication (Kacmar et al., 2003).

2.1.4.2 *Communication quality*

Quality of communication determined by the value of information shared during the cross-functional team communication. If the communication between team members is novel, detailed, credibility, presentation, relevant and cognitive then it can be define as high quality communication (Darawong, 2015). Team members are high skill persons and concept of cross-functional team is to share these attributes and aligned together to solve problems in projects. The quality of communication provides the extent to which team members cooperating with each others.

2.1.4.3 *Communication formality*

Internal communication between the team members consider as informal and communication between team members and the team leader conceived as formal. Both formal and informal communication has their perspective importance in the performance of the cross-functional team (Darawong, 2015). As compared to dispersed (geographical location), non-disperse team have high formal and informal meetings which contribute in satisfaction and involvement of the team members.

2.1.4.4 *Effectiveness of communication on cross-functional team*

It has been recognized from the literature view that communications have a high impact on the outcomes of the cross-functional teams. Misunderstanding and unclear task could pertain to a delayed in projects and drain the motivation of cross-functional teams (Klarner et al., 2013). In case of cross-functional teams interacting with the clients, it is more desirable to have a close interaction not just between the team members but, with clients at the same time. Adopting this approach will increase not only team satisfaction and performance but the clients as well (Nada et al., 2006). Nevertheless, cross-functional team ought to communicate to deliver in a wider prospective. Communications system in cross-functional team is complex due to involvement of number of managers and leaders. For instance, one team member from one functional department has to report to his/her manager as well as to team leader of the cross-functional leader. Sometimes cross-functional team has more than one leader which also generates the confusing situation of reporting system and following instructions. The complexity of the network and heterogeneity of the cross-functional team is show in figure below

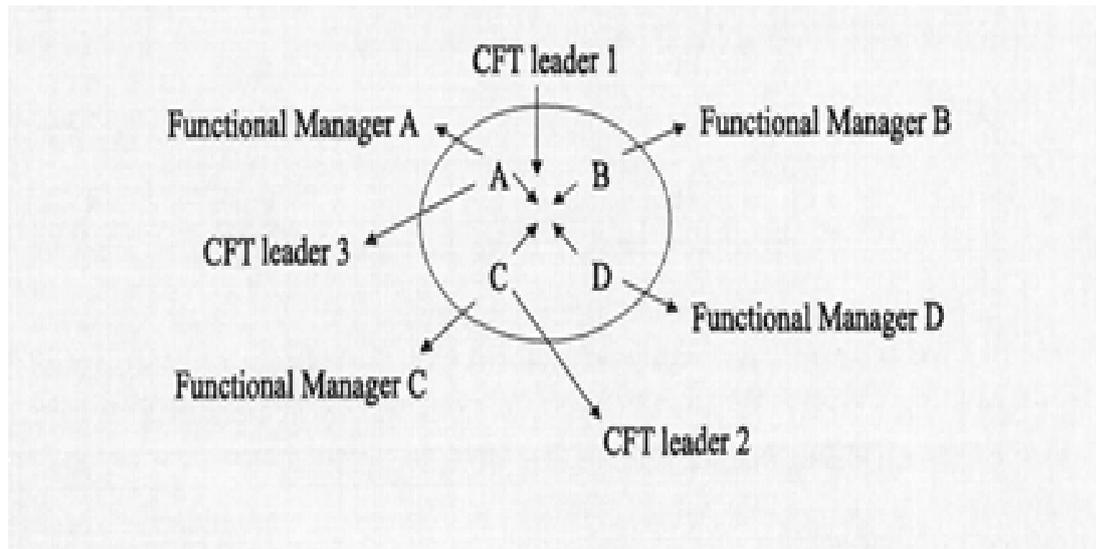


Figure 4; Complexity relational network of cross-functional teams

(Source; (Sheila Simsarian, 2002))

From figure 4, it can be observe that relationship between the cross-functional team members themselves and with the team leader/manager is complex. This also leads to effect value of communication in this complex system and the best way to overcome a complexity is by communication within team members and team leader/managers. Avoidance of overlapping roles and duties increase the trust in unified directed cross-functional teams.

In the next chapter (Research Methodology), it will be explained how author able to build adequate research instrumental tools to investigate the findings.

3 Research Method

3.1 Research Design and Method

The research work begins with the selection of the topic and followed by the discussion with the supervisor to understand the direction of the research. After several meetings and discussion, the topic was finalized and author started viewing available literature on topic by using keywords. From the literature review, the gaps between the research areas have been highlighted and the topic was narrow down to more specific area of research interest.

The purpose of doing this research work is to investigate the factors that influence to a great deal on communications and outcomes of the cross-functional teams and communicational tools by cross-functional teams evaluation of tools. Since areas where cross-functional team can be deployed are broad therefore, it is important to generalize the overall functional segmentations. There have been much research conducted on cross-functional teams and factors involved in respective outcome of the team but very less research work done on evaluating the effectiveness of particular communicational tools used by cross-functional teams. The research work is divided in two main segments; first one focusing on the communicational effects on teams and second one focusing on the communicational tools effectiveness and behaviour on the teams. Excess availability of the literature on communication effect enable author to choose deductive approach to analyse and compare the data. Due to lack of availability of the literature on communicational tools, an abductive approach has been adopted by author to analyse and conclude the collected data. This study is designed as qualitative study and six numbers of interviews have been conducted for the collection of data.

To analyse the empirical findings during the interviews, the theoretical framework have been created. Interpretation of the empirical data and literature review conducted after the interviews. With the data interpretation author become able to make conclusion about the research work.

3.2 Work Approach

This research work is a contribution towards better understanding of the cross-functional team in an organization and focus on the considerable effects of communication that are important for the cross-functional teams such as task achievement, innovation and trust culture. From literature review, author able to gather sufficient amount of knowledge and theories about cross-functional teams and relevant research works on the topic. To follow the empirical study, research work started with intensive literature reading to create a clear understanding of the cross-functional teams and factors that influence cross-functional team communication and evaluation of communication tools. Nevertheless, author finds the gap between the studies and become able to formulate three questions that investigate the research focus. The study have been built around the communicational attribute in cross-functional team, involvement of team leaders in promotion of team communication and communication tools use in cross-functional team. The objective of the study is to determine how participants reflex their experience related to above mention areas. Deductive and abductive research approach has been adopted by the author to evaluate the findings. Göran, 2009 described deductive research approach as, formation of several questions reference to fulfil the research objectives that extracted from literature review followed by empirical data gathering which eventually provides outlining of research process and ended with conclusions and suggestions for further research. Whereas according to Kirkeby, 1990 and Taylor et al., 2012 abductive approach is a systematic way of creating/developing new knowledge on the bases of research data.

3.2.1 Selection of Methodology

Generally, in scholarly research endeavours there are two research approaches used widely; deductive and inductive research approach. Both research approaches have their perspective methodology and outcomes. Deductive research process starts with specific problem statement which can be either scholarly or practitioner-oriented or both and whole research process is consist of Idea, support, implications and contribution. Göran (2009) has explained two different ways of conducting deductive approach, *i.e.* clockwise and anticlockwise deductive research process. Anticlockwise deductive approach started same as clockwise deductive approach except the idea is not developed and explicit by research questions rather than reversing the order of research process focusing more on expected contributions, implications and support. The research process flow diagram is shown in figure 4 depicting the flow of research in clockwise and anticlockwise deductive research process.

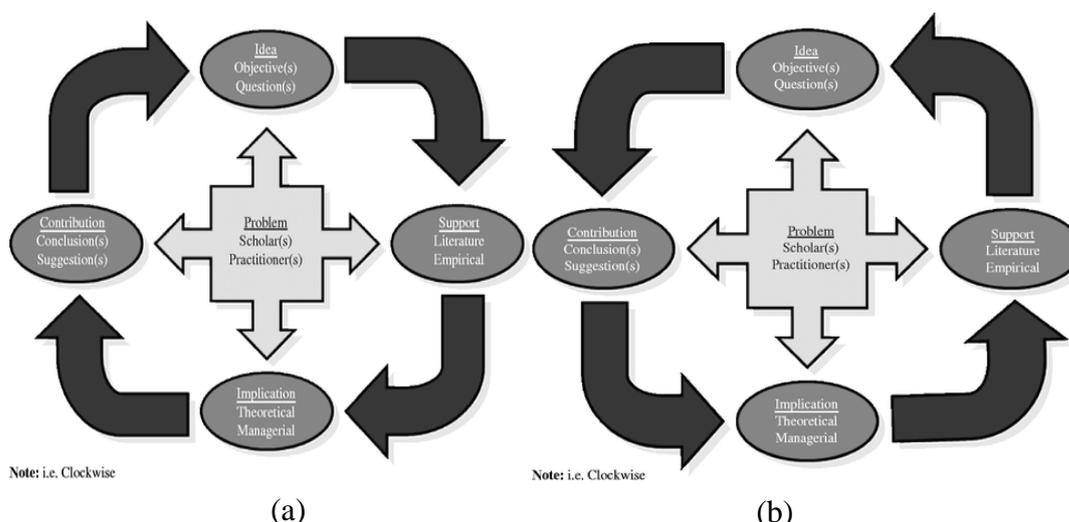


Figure 5; (a) Deductive approach (clockwise) (b) counter intuitive approach (anticlockwise)

Source; (Göran, 2009)

Even though anticlockwise deductive approach appeal to save time and resources but still some research work is undergoing. Blend of clockwise and anticlockwise deductive research approach has been chosen by the author (by going back and forward during the thesis work to explicit the contribution of the research work).

For the collection of empirical data there are two approaches that can be adopted; one is qualitative paradigm and second quantitative paradigm. Quantitative methods have high appropriation in case of cause-effect relationship without compromising professional values and data collection is not effected with intrusive and controlled techniques (Allen-Meares and Lane, 1990). Qualitative data is nominal and based on words and interpretation of the words having real importance as words can be related to specific contrast and perspective.

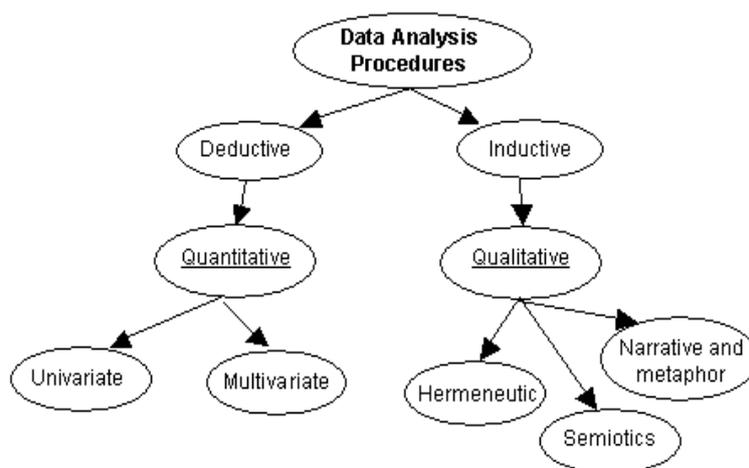


Figure 6; Data analysis tools and procedure

Source; http://www.celt.mmu.ac.uk/researchmethods/Modules/Data_analysis/

For the analyzation of data, a combination of deductive and abductive approach has been chosen by author. Purpose of choosing two different approaches is the availability of the literature on the topic. Since this thesis is covering two areas, communicational attributes and communicational tools, therefore author search the availability of literature for two segments. Due to lack of availability of literature on communicational tools, an abductive approach is used to analyze the data. Abductive approach is proven good when author want to disclose new material in specific research areas (Dubois and Gadde, 2002).

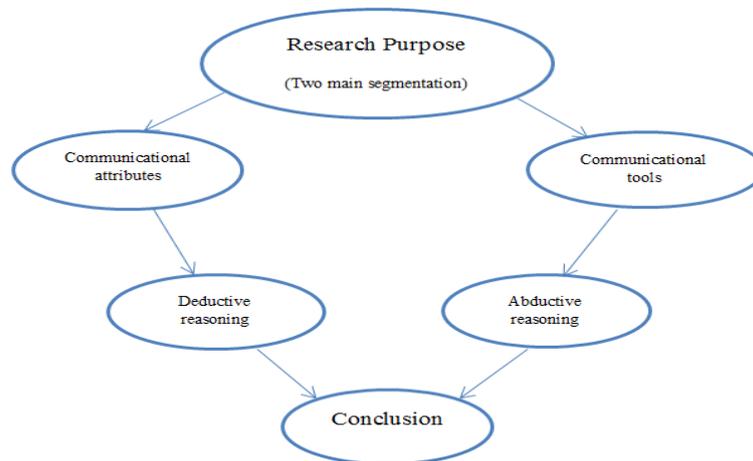


Figure 7; Abductive and Deductive reasoning used for analysis (Source: Author)

Author used deductive reasoning for communicational attributes by inferencing to research literature. To build up theory, author have found sufficient amount of literature which allow the construction of theoretical bases eventually used for finding new outcomes buy comparing the empirical findings with initially built theory. During the course of literature research, author could not find enough literature to build up a theory covering the area communicational tools for cross-functional teams. The limited availability of literature leads to abductive reasoning of empirical data whereas abductive reasoning is most likely inference that can be made from a set of observations.

3.3 Data Collection

Data has been collected in form of interviews. Selection of interviewees was done by considering the role of participant in cross-functional teams.

3.3.1 Interviews

For the collection of empirical data for a research work, conducting interviews with the relevant persons proved very appealing and provide sufficient amount of information needed (Rosenthal, 2016). Interviews can be conducted personal meeting with the interviewee or conducting the interview on phone or Skype is also becoming popular because of its resilience.

Before conducting the interviews, author has carefully selected the data collection approach to receive the best information for the research questions under investigation. Translation of the interview by interpreter can lead to misunderstanding of the view of the interviewee (Kapborg and Berterö, 2002). To mitigate such problem, all the interviews were conducted in English language. All the interviews were recorded for future interpretations process.

3.3.1.1 *Qualitative Interviews*

When the purpose of interview is to gather information covering a larger specific area which is under investigation without high degree of standardization is required, qualitative interviews provide exact ease and flexibility to execute it (Rabionet, 2011). Qualitative interviews mostly conducted for deductive studies to build up theories along with altering/challenging the existing reality (Christensen, 2011). A semi-structure interview approach was adopted by the author to collect the empirical data. As explained by Easterby-Smith (2015) in his book, the semi-structure interview provide sufficient understanding of the concepts and how the respondent dealing practically in their work environment. For the better understanding of the research topic, interviewees were provided necessary information about the thesis work and its expected results. For instance, what are the objectives of the research work and how the interviews will help to conduct the research work.

3.3.1.2 *Snow Ball Sampling*

Snow ball sampling is used when author search and realize somebody who meet the criteria and rare to find them. Confidentiality of the appropriate person is always considered in the snow ball sampling. This kind of sampling start with someone who is in the social circle (friend or suggested by supervisor) and work well with the individuals that are part of the network and groups (Easterby-Smith et al., 2015). Author chose this kind of sampling as it is hard to find the individuals who specifically work in cross-functional team rather than working in a team with similar skills and departments.

3.3.1.3 *Selection of organizations and interviewees*

The selection of the organization was based on the business structure. Organizations which are project oriented and more prone to use cross-functional teams on domestic and international level provided by multiple business functional areas. Diversified organizations tend to have several projects going at the same time with different teams with different professional backgrounds deployed to achieve the subjective tasks. After identifying the organization, the author contacted the individuals working in cross-functional teams for the interviews. The interviewees have been selected with a working experience of more than a year. Since team leaders and team members could have different approaches towards how they see communication in the team, therefore two team leaders and four team members working in different organizations were interviewed to collect the data. Selection of the organization and interviewee was done very carefully since it is very important to gather the right information from the individuals who actually work in cross-functional teams and have experience with communication as part of their jobs. As per the provided time frame for the completion of the research work, interviewees were selected only from Sweden and Norway as it provides a deep insight into a particular working environment (assuming the same working environment in Nordic countries, especially Norway and Sweden). List of the interviewees is shown in table 1 below.

Interviewee (IR)	Location	Position	Time (Mins)	Medium
IR1	Oslo, Norway	Team leader and project manager	30	Telephone
IR2	Västerås, Sweden	Project Manager	30	Telephone
IR3	Borås, Sweden	Quality insurance team member	30	Telephone
IR4	Borås, Sweden	Project team member	30	Face to face
IR5	Fagersta, Sweden	Global inventory control	30	Telephone
IR6	Fagersta, Sweden	Global Inventory control	30	Telephone

Table 1; Interviewees and method of interview

The selected interviewees were asked twelve open end questions which lead to further discussion providing additional information of their experience. Due to the open end approach, the author was able to comprehend sufficient data for analysis. Although, the number of interviewees is limited but the author found out symmetry in the collected data which leads to a conclusion.

3.4 Data Analysis

Yin (2011) stated that theoretical finding leads to the formulation of the research questions. In the theoretical finding, it has been recognized that communication is a key factor in the performance of the cross-functional team and there has been sufficient research already conducted on the topic but apart from that, not so much research has been done on the effectiveness of the communicational tools. Considerable steps in qualitative study are control of the data correction and in depth analysis of the data as well as critical reviewing of the analysis findings during the process of data analysis. Real quality control of the qualitative study is the validity of the study and its outcomes and make a study valid is possible only by proper collection of data and its interpretation (Yin, 2011). Triangulation is one effective way of increasing the validity of the qualitative research. In this research work, source of data has been gathered from different resources and then interpreted. According to Yin, (2011), every data collection has a unit and in form of interview every single interview will be a single unite and as in this study six interview have been conducted therefore there are six units and these units are arranged with nested approach.

Qualitative data interpretation required different approach then quantitative data which provide neat distinction between gathering and analysing data. But qualitative data provides more opportunities to gather inside of that may be neglected in traditional data analysis techniques. Qualitative data analysis required numbers of process for the analysis such as; breaking down of data, synthesis of data, pattern search and discovering the important part within the pattern of data (Woods et al., 2002). Grounded theory approach has been adopted by the author to analysis the data. Grounded theory has characteristics of methodology of discovering theory based on the systematic and analysed data (Goulding, 2002).

While the data is collected from different firms therefore different controlled variables introduced by the author to unify the data. First, team size as a control as team size effect the cross-functional team cohesion and eventually effect the communication between the team members (Thornhill, 2006). Second control variable set by the author is working tenure especially longer the working tenure more likely the employees follow the routine process providing redundancy in the communication. Therefore, minimum of one year work in team was set while selecting the interviewees provided with exemption for the team leader from this controlled variable. Organizational size was the third control variable set as size of the organization has different attributes related to the communicational challenges.

3.5 Trustworthiness

According to Yin (2011), trustworthiness of a qualitative study can be built by three objectives; *transparency*, *methodic-ness* and *adherence to evidence*.

Transparency is a vital step of building trustworthiness in a research work and it can be achieved by doing qualitative research in a publically accessible manner. The data used in the qualitative research should be available for public who want to inspect and scrutinize the research work.

Methodic-ness is next objective and it provides space for discovery and unexpected results. It represents that if the study is conducted with explicit defined research design or more informal rigorous ways.

Adherence to evidence means presence of explicit set of evidence for the trustworthiness of the qualitative research. This objective contains actual language of the interviewee and in the context in which it interpreted.

For the insurance of high generalizability of the research work, six participants from five different organizations have been selected for the interviews. This variety of participant provides the broader range of data collection which allow author to find the explicit results. Easterby-smith et al, 2015 emphasize the validity of the research in accordance to the accurate describing of the findings. For the validity in this research work, a combination of methods and grounded theory has been used.

3.6 Ethical Considerations

Easterby-Smith et al., (2015) narrates that in every research work there is always ethical issues that should be addressed properly and its author's responsibility to consider and take measure to avoid these issues during the research work. There are several aspects of ethics which author compliance while conducting the interview and throughout research such as, risk of unanticipated damage to reputation of interviewee, information protection of interviewee, exploitation risks of interviewee and company, well pre-informed interviews and outcomes of the research work. Before and during the interviews, all the responsive persons were contacted via email and explained the purpose and outcomes of the research work and permission to use name and designation of individuals and company names were taken in case of their use in the research work. The interviewees were well informed about the recording of the interview and ensured total anonymity of their participation.

4 Empirical Findings

In this chapter, connection between the theory and research questions will be formulated and the data collected from the interviews. The question formulated for the interviews will be correlated with the research questions. The details of the interviews questions are listed in the Appendix A.

4.1 Correlation between Research Questions and Theory

Cross-functional team is composed on individuals from different functional departments to work together on a project given the predetermined time frame. With the level synergy, it can be predicted how the project will be pertained to its final results. The cross functional team has great potential if team members effectively communicate. Three Cs are off most important in team work i.e. communication, coordinate and cooperate (Chiu et al., 2012). These team members may or may not have been working before long enough to be comfortable to share information during the process. This can create an atmosphere of ambiguity between the team members. This will lead us to the first question of this research work. Previously, Chiu et al (2012) studied the three Cs and came to conclusion that cross-functional team performance can be increased with the improvement of three Cs..

In this research work, the first question is formulated as under to see importance of communication in team members and team leaders/managers.

RQ1 How communication effect the performance of cross-functional teams

Two team leaders from different organizations were interviewed with reference to determine their views on the importance of communication between team leader and team. Along with that, four individuals working in cross-functional team were interviewed to find how they think and experience the importance of the communication in of cross-functional teams.

All the interviewees said that communication is the key in the performance of the cross-functional teams. The emphasis put by participants on communication increase the value of first finding which is in accordance to the theory. Finding is further discussed under following headings below

Communication

First team leader narrates as

“Its number one priority and there is nothing more important than communication I mean (...) if they don’t communicated nothing comes out, failure and success is all dependent on communication (...) team is all about communication that’s why you have a team otherwise you can have individuals.

Strong emphasis of communication by team leader shows the value of communication in team building and growth. Cross-functional teams required convey of information for the achievement of tasks. For instance, traditionally, one department mostly has set standard operating procedures (SOP) following the routines and employees working under same department know daily tasks. In this scenario, the communication between the colleagues do not required as much as in cross-functional team. On the other had cross-functional teams also considered project teams and project mostly vary in task and time line. Each project have its specific operating procedure and it required to convey the information to all team members. If one of the project step get delay due to some circumstances it effect the whole project time-line. These situation needs to be conveyed from bottom to top to take the necessary measures required.

Team leaders said they almost communicated on daily bases with the team members and vice versa when the same question was asked from team members and some of them answer as at least three times in a week.

“Information is base for any project to be successful, if there is any delay in decision making process it will definitely effect the performance of the team outcomes (...)the basic problem is communication problems and if the stakeholders informed well ahead of time then the project goes on time (.....) You cannot be successful without proper communication”

The new global business required awareness of the markets more than before. Stakeholders are well informed due to excess to the projects situations. Cross-functional teams required to convey the messages if there is some unforeseen situations to team leader who is responsible to inform to relevant project party. The same situation can apply in supply chain process too. Whole supply chain halt if at one part of the chain break down and failed to deliver which reduce the productivity. The preventions of such situations required well planning and availability of the alternative sources. If the strategies are well explained by team leader, team members become aware of the execution process of strategy. As mentioned by Chiu et al., 2012, teams can not be successful if the team don't have proper communication and from the interview answers that the reliance of team success is down based on communication frequency and ability to convey messages.

“I communicate every 30 minutes with team members and with team leaders three to four times in week but in case of technical issues team leader is right choice to communicate (...) there is nothing without communication in cross-functional team, just having the skills is not enough and job cannot be done without communication (...) you may be able to fix the problem by yourself but to create a satisfaction between the team members and create an environment of trust you have to communicate”.

Maturity of the team is depending on how the team starting to communicate and if new member from the beginning become comfortable provides suitable platform of communication. New member required comparatively less time to adjust in if team leader take steps to allow new member to communicate. The path of adjustment will be easier if the team have a high communication environment. Team leader can promote and give chances to new member to contribute in the communication.

“it is the most important thing in any team performance and it is the role of team leader to find out the communication lack or breakdown between the team members and its team leader responsibility to fix the blockage (...) if I am a team leader and I don't have the influence to guide the team members I have to involve other parties and it does not leads to anything good (...) I would say it's a counter effect approach”.

Cross-function team leader can be described as facilitator for communications between team members. Communications from top to bottom and bottom to top are influenced highly by team leader. As the interviewee mentioned, the right instructions should come from the team leader. By involving individuals out of cross-functional team raise the question of leadership.

Coordination

Coordination is the core strength of cross-functional team and it can be achieved with better communications Almost all the interviewees agreed on communication as the base of coordination in cross-functional teams. No coordination can be done if the individuals in the team stop communicating the issues and tasks with each other.

“you can have aerospace engineers in the cross-functional team but if they don't coordinate with each other with communication nothing will come out”.

The individual skills of the team members are not worthy and inefficient if team members fail to coordinate with each other. The base of cross-functional teams is to unite different skills together to work on one task. Communication between team members allow the knowledge to flow from one direction to other providing ground of mutual working atmosphere.

“I have experienced as a team leader that whenever there has been some issue or delays in the projects it’s because team members lack the coordination with each other and I personally make sure to get them together and make them sit in the room and let them communicated (...) so in one way I push them to communicated to get a coordinating team”.

Coordination by communication rely on how productive the discussion the team members conduct during the meetings. If the discussion is destructive, the results of meeting are highly disappointing at the end. In many cases, team members lack the coordination due to individual differences which require more involvement of team leader to overcome the differences. In this situation team leader lead the discussion by allowing every member to participate and express his/herself opinion about the project.

While interviewing the team members, one of the interviewee highlighted the importance of the team diversity in coordination

“In my previous organization I felt my team members were not coordinating with me as I was the only one from outside of Europe (...) this situation somehow make me frustrated even to communicate with the team members as I never get a sufficient feedback for the questions I was feeling to discuss about”

The cultural difference is one of the hurdles in the team communications. Especially, if the team member is from different culture does not speak the language of rest the group. Naturally, we feel more comfortable speaking the native language which increases the chances of segregation within team if one group dominates rest of the team. It can be observed that team leader will be aware of the situation if he or she has worked in culturally diversified team.

Cooperation

“People hate meetings but if team members not communicating with each other it means they are not cooperating with each other (...) so what I do I arrange a meeting and lead it myself to see who is communicating and who is not and try to create atmosphere of cooperation by letting them talk to each other”

From team leader point of view, if team members do not talk with each other which eventually effect the cooperation of team individuals with each other. Meeting can provide better surrounding where team members can express their problems. These meetings are worth arranging if the agenda is cleared by team leader and provide opportunity for everyone to speak. Most of the meetings are considered useless because of one person (team leader or manager) explain everything without a follow up discussion on the issues. Cooperation level increases in the team if every member feels that his/her voice is going to be heard with a sense of everyone has equal chances of speaking.

“So what I do, I gather all the team members and let them talk with each other and if they don’t, I start the conversation and ask if you have question with this person or (...) and then the team members start to talk to each other and eventually realized that they have several questions that need to be addressed (...) so cooperation is started more likely with the frequency of the communication between the team members. So you would say I work as a facilitator between the team members”

According to the upper statement, team leader is ensuring that all the team members present their problems and if team leader notice someone is not participating, team leader take the initiative to ask the view of the member. One more point highlighted by the participant that cooperation between team members increases with frequency of communicational sessions.

Satisfaction level

Satisfaction is the key in the cross-functional team outcomes. If team member feel satisfied with his or her presence in the team then it increase the communicational flows. According to Ying-Jung and Huey-Wen, (2005) satisfaction of working in the cross-functional team is related to how worth their voice get in the team meetings and during the communications sessions

“Yes, I am satisfied because I say what I want to say and there is no problem I feel to express myself during the communicational period either with team members or with team leaders”

From the statement it can be perceived that more the ease of communication between the team members and team leader/manager more pertain the satisfaction in the group. We have our practice from daily life that if we feel that we can communicate more easily in a specific meeting, we ought to feel more satisfied eventually. The increase in satisfaction level in the team increases the willingness and motivation of the team members to work together. Lack of satisfaction level in team members isolates the person from the team eventually affecting the overall outcomes of cross-functional team.

“I didn’t feel satisfied at my previous work place because I felt left out in the team, especially when I was the only one who was from outside of Nordic countries (...) so I quit that job due to that reason”

Cultural difference within cross-functional team requires more precise understanding of the team members. Minority feeling as a general perception proclaim dissatisfaction. If team leader become aware of this situation, he or she can prevent by creating a unified team focusing on cultural issues.

RQ2 What are the communication tools mostly used in cross-functional team and its effectiveness

This question has been the most interesting for all the interviewees. While working in the team for longer time makes team members comfortable of using one particular communication tool provided by the organization. So, while asking which tool they are using and which tool they think is more efficient than other, author received variant of different answers but on one mean of communication *i.e.* email, almost all the interviewees were agreed that it’s the least efficient tool of communication between the team members and team leader/managers.

Telephone, emails, skype, face to face meetings, Facetime and even Facebook are the tools mostly described by the interviewees. The efficiency of particular tool is very dependent on the situation and sensitivity of the issue when defining which tools is more effective for communication, coordination and cooperation in cross-functional teams. Team leaders said they prefer more of the physical meeting with the team members or at least they want to see them on some devices such as Skype or Facetime.

“Generally, I go in and have a weekly meeting face to face with the team members in the same room (...) and I also do lots of web base meetings too and I don’t even need to put all the people in the same room but at least you share a video screen or to the least presence of team member on the phone call. We are piloting a project called Facebook for work and it’s free at the moment but in the future Facebook going to charge for the services but it will be very cheap as compare to the alternative communication tools”

One team leader mention the lack of trust while team member using the internet as they might be browsing something which is not related to their work. But later they found out that it is actually misunderstood the behavior. In accordance to the statement, the organizational structure imparts a noticeable role in the communicational tools selection. Traditionally, most of the organizations prevent using of social media at work but trend is changing. The level of confidence on employees and necessary freedom at work can evolve into new standards of communications. It can be predicted that in near future the social media technology will take over most of the traditional communicational tools.

“Instead we made a survey now that trust increase between team manager and team member increase by having Facebook at work (...) and they also think that it is reducing waist of communication and increase the simplicity at work”.

In some cases, team members rely on the communication tool provided by the organization and they think that it is more convenient to use since everyone knows how to use it. Implementation of new communicational tools required surplus money and necessary training to use the equipment. While changing the communicational tools for whole organization required time to deploy the tool properly. Since cross-functional teams work with same communicational tools (not to mention the consultancy firms), these scenarios can affect the team communications but if with better implementation of modern tool communications can be improved.

“we normally use online tool called Webex system provided by (...) it’s kind of virtual meeting room and all the team members are connected at the time of the meeting and we discuss the issues (...) one person mostly provided as the team leader or moderator”

“well most of communication is with email, as well as we have meetings too and we have chatting tool also which is basically like a messenger tool (...) and there is no particular rule deployed by organization. Emails can very easily misinterpreted therefore talking face to face is more preferable (...) I don’t like email but at the same time not everyone can sit all the time in the meetings.

Time is a crucial factor while defining the efficiency of a particular communication tool and in some cases compromises can be made on physical meetings over emails or phone calls. Even using email saving time but email contents can be misunderstood and unclear the intention of the sender. These issues eventually effect the corporation and coordination between the cross-functional team members.

Email and phone calls are the mostly used tools of communication if neglecting the special occasion where need of face to face meeting is inevitable.

“If I chose to tool of communication I chose face to face meeting then there are not trust issues and I can convey myself way better and can listen and understand other team members with more ease than other communication tools”.

Coordination in most of the interviewees point of views comes from the team leader, if the team leader is present when he/she is needed, communication nourish and more coordination establish between the team member and team leader. Presence of team leader physically or virtually during the communications increases the coordination between team members.

“I mostly communicate with face to face as I believe presences of team members are important for coordination and corporation (...) I am not in favor of email executive managers and you know them well or maybe I am old fashion in this perspective”

In communication, there are several factors involved. Physical gestures, eye contact, hand and body movements can predict the mind state of participants. Team meetings are example of better communicational attributes. Presence of all the team members in one room can increase the corporation especially when team leader facilitate and ensure that every team member get proper attention while speaking. Satisfaction of using communication relate to how team is communicating and what tools they are using. For instance, presence of the team members in one room they can see each other have high impact than other tools (Ying-Jung and Huey-Wen, 2005).

RQ3 How does hierarchy differences between team members effect on communication of cross-functional team

Almost all the interviewees exclaimed that they don't feel any hierarchical differences while communicating with the cross-functional team and team leader/manager except one team leader who said it exist.

“yes off course I mean it's very interesting to see when team is sitting and having lunch (...) and its completely depend on the manager to let the team members talk in the group and not to forget what is the culture of the organization (...) but it's very rear that people spell out what they think because hierarchy and dependency on other person with reference to salary and recommendation in the future really have an effect on communication (...) I have made my way up to project leader and therefore I know this more because I was once blue color employee”

It can be observe here that most of the team members think that they have freedom of communication with the team members and team leader but despite of that there is still hierarchy difference exist when it comes to who is responsible/answerable for who. By close monitoring of statement, we can understand the fact the team leader who has made his/her way to the top from bottom can understand the mental situation of team members as they have been there at their position once. Better understanding of hierarchal effects on team communications can prevent this disturbing factor to communication.

“one bad thing about social media is people say what they want to say and responsible for it (....) but if you utilize social media in organizational context then it works really well as team members don’t think about if someone sitting out there reading what I am writing and that’s the person who responsible for my salary and bonus. On the contrast if a team member is sending an email, he/she will think shell I link team manager in it and what will be the consequences if something goes wrong (....)”

Social media has generated new ways of communicational attributes. This communicational medium provides the way in which we are freer to express ourselves without the fair of direct reaction. Hierarchal difference between the team members can be overcome by introducing social media communication between team members.

“In our organisation it is very flat management and everyone given a chance to speak up and no one take decision on behalf of anyone else (....) so I don’t think so we have any hierarchal obstacle of communication (....) so almost 90% it’s like that but for some projects approval you have to go custody committee or project sponsors then they have their final words on the decision otherwise we in team don’t feel anything like that”

Promotion of communication within the team members is facilitated by the team member as said by most of the interviewees. It also can observe that organizational structure define the level of hierarchal effect on the communication. Organizations with less chain of ranks and more flat management naturally tend to decline the hierarchal effect.

It depends on the team leader, I mean I feel it easy to talk to the my team manager but team leader is also vice president of the organization, so let me put it this way if the department is same and the manager is from the same department, then it is easy to communicate because we share the same agenda but when the managers from other departments involve in the team management then I feel it harder to communicate because we don’t share the same opinion”

The answer by interviewee shows the complexity of the communication in cross-functional teams which is discussed in theory. Chain of command in team decreases the freedom of talk and increase the hierarchal fact.

In the last question of interviews related to RQ3, participants have been asked about the factor of time influence on the communications with team members and team leader. Majority of the participants agree to importance of the time allocated for the physical meetings with team members but when it comes to other communicational tools it is really hard to investigate the effect of time.

“I don’t feel pressure of time when I am in meeting (...) time is a crucial factor though in my opinion but in my organization we have enough time for meetings”

“in my organization I have never felt that I am stressed to convey my message because I have less time..we are flexible to communicate and I am satisfied with time allocated for meeting”

It can be perceived here that time is a crucial factor in communications whether it is in form of meeting or in other forms. If less time is allocated for each member or uneven distribution of time to team members will initiate the situation of discomfort and less satisfaction. Team leader presence in the communicational session helps the even distribution of time for every member.

5 Analysis and Interpretation

In this chapter, author will discuss and analyses of the empirical finding. Chapter will cover effects of behavior of team members towards different communication tools, their effectiveness and communicational attributes in the cross-functional teams. Tentative model in some case will be presented where applicable.

5.1 Communication attributes

To analysis the results, author have divided the finding in several sub-headings in this chapter. Although all the participants said that communication is the key for the success of any cross-functional team but to determine the consequences of lack of communication need an interpretation of collected data. How the communication will be done between the team members is dependent of the organizational infrastructure. One of the interviewee said that it is easy to communicate with domestic and abroad team members with inherent communicational tool provided by the organization. According to Darawong, 2015 cross-functional team which are disperesed and not sitting under the same shed should have to have more communication to overcome the confusions between the team memebers. One way providing the ease of communication is the organizational protal which conact all the team members on the same platform to communicate.

“we use our organizational base communicational system called Webex, which provide functionalities of live calls, video calls and its really effective way of communication since everyone know how to use it and everyone is available on it most of the time”

Accroding to Zolin et al., 2004 fromal and informal communicational meetings promot the trust in the team member which is in accordance to the authors finding.

“we have informal communicational oppertunites with the team members almost anytime of the day and then we have a weekly formal meeting in which we sit down with our team leader and discuss the progress and problems associated with ongoing projects. I think this is important to increase the trust within team members and increase the satisfaction plus motivation”

Informal communication lead to more blend in team members as they discuss issues which can or can not be related to projects. Informal discussion are important to create satisfaction within team members.

Communication quality

A consistency of a particular theme appears during the responses of respondents emphasizing the quality of the communication on the particular way of communication. For instance, if the team member has ease to convey he/she opinion then it increase the team relationship and trust. Darawong, 2015 said the quality of the commuication leads to satisfactional improvement of the cross-functional team members.

“During my working period in this organization I have never felt that I cannot say what I want to say which provide me not only the confidence in myself as well as I have built trust in my team at the same time which in sense provided by the quality information sharing”

All respondent during the interview session was agreed on the point of communicational freedom between the team members which eventually create the atmosphere of trust between the team members. Provided with that, it has also been recognized from the data inscription that leader has a high role in the buildup of trust in team members. If the team members trust the abilities of the other team members, the overall performance of the team increases. Dependency of communicational quality on team leader shows the importance of communicational flow from top to bottom. One important sector recognized by author during the interview is the influence of the team leader in cross-functional team. If team leader take initiative and available physically in the team communications, it has high impact on the team communicational quality since team members feel obliged to convey the problems they are facing in the projects.

Communication formality

Most of the respondents do not agree to the formality of the communication, instead they are more corn to the disadvantages related to the formality requirements for the communication between the team members and team leader. As described earlier by Darawong, 2015 that formal and informal meetings are important for the communicational development among the team members but with the team leader also.

I can go and talk to my team member when I am in trouble in some cases when I have done all what I can and I have to give some compensation to our customers, in these case I go and talk to our team manager and he see that I have done what I can do to resolve the situation. This provide me confidence in my work”

The empirical finding here shows the alignment with the statement of Darawong, 2015 as interviewees discribed they have chances of experss themselves about the problems they are facing in daily project works.

Communication frequency

“It is in the best interest of the team performance when they are more communicating the problems they are facing” said by one of the team leader during the interview. Frequency of communication is somehow created confusion while author was doing the interviews as interviewee was feeling hard to answer the question. Nevertheless, interviewee pertained to more communicational advantages towards the improvement of the cross-functional team.

“Whenever I observe that the team is not communicating and more complaining then I feel this to call for a meeting, while in the meeting I make each team member to talk and let him/her express what they are feeling about the progress of the projects. So, I believe the meetings or the any other form of communicational handling of the situation should be part of the routine work”

As described by the team leader, frequency of the communication between the team members should be more and consistence. For instance, daily meetings or once or twice in a week with the team leader benefits the progress of the team as well as clear the unseen barriers between the team members.

Since it has already been recognized in the literature study and specially Johnson and Lederer, 2005 and Thatcher and Zhu, 2006 emphasises the relativeness of performance of any cross-functional team with the frequency of the team communication which is in accordance to the empirical finding of this thesis work.

The role of team leader according to Kacmar et al., 2003 is to facilitate the communication between the team members which is exactly one of the interviewee narrates in the interview so empirical finding is seconding the theory here.

Coordination and cooperation

From the data analysis it has been recognized that more the team member communicated with the each other more they pertain to coordinate and cooperate with each other. One hidden aspect of long communicational meeting can reduce the effectiveness of the meeting calls. For instance, if team members are intend to listen more than speak in a meeting, the participation and interest of the team members declined. This situation creates a dilemma of useless meeting which drain the interest of team members to participate in communication.

“In the communicational sessions, if I don’t find the opportunity to speak up the problems I am facing, I feel frustrated and less motivated”

An important factor in coordination and cooperation between team members is the specified goals. It has been observed during the interviews that if team members know what are the tasks and time log for the project, team meetings become more efficient and team members feel more conceived to coordinate with each other.

5.1.1 Satisfaction level

Participants have shown the satisfaction with the communicational situation between the team members and the team leader. Beside the overall satisfaction pertain, the level of satisfaction vary with how the communication has been carried out. For example, if the communication is conducted via email, there is a high chance of lack of clarity in the message which generate frustration and ambiguity in the team members.

“It is very common that message is not clear when it is sent in by email and it generates conflicts sometimes”

Satisfaction level of the team member increase when they feel that their voice is going to be heard in the team meeting and they will get the answer for their speculations about the ongoing projects. The observations during the data analysis supports the findings of Klarner et al., 2013 in which they emphasized the significance increase in the satisfaction level of the cross-functiona teams with the increase of the communication between the team members.

Below figure explain the relation between the cross-functional team satisfaction and the communication involvement.

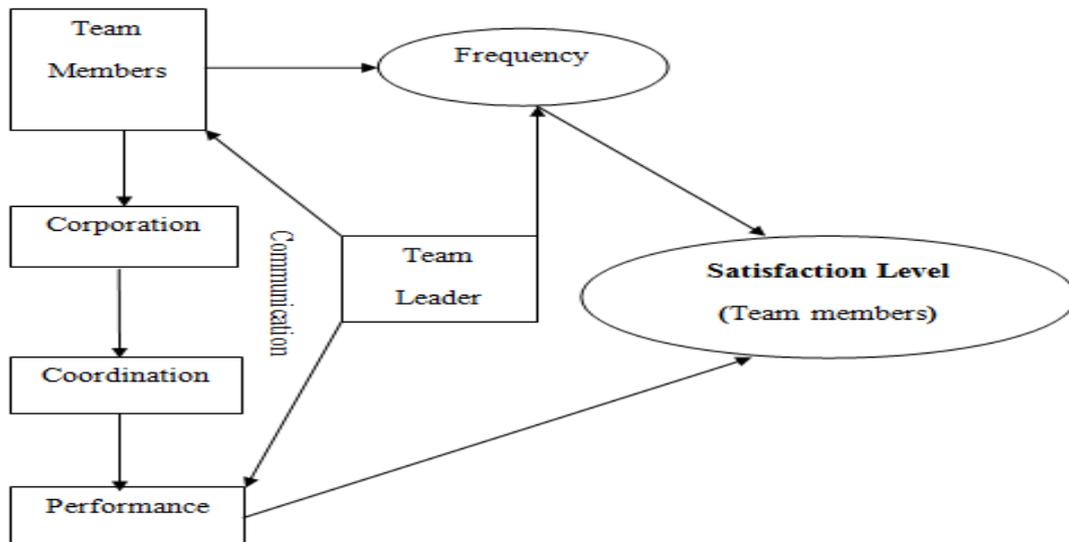


Figure 8; Relationship between the team members satisfaction and communicational effectiveness (Source: Interviews data inscription)

Figure 7 shows that the increase of satisfaction level in team members is generated by two means here, one with the increase of communicational frequency and second with triumph feeling of target accomplishment. Team leader have an important role of facilitator of communication both the frequency and performance parameters.

From the data interpretation, it has been recognized that satisfaction level in the cross-functional teams depend on two factors; frequency of the communication between the team members and the performance of the team. Performance of the cross-functional team is the measure of goal achievements within the given time span. The results are seconding the theoretical findings since Kacmar et al., (2003) where they dicribed the high dependency of the cross-functional team performance with the commuication. Kacmar et al., (2003) also dicribed in their finding that satisfaction of the team members increase with the increase of the communicational frequency where team leader has a role of communicational plateform provider.

5.1.2 Relationship of team communication and performance

Data interpretation shows the relation between team performance and team communications is highly relatable. Cross-functional team performance can be related to the overall frequency of communication between the team members. From figure 7, we can see that performance of the team increase with coordination and corporation between the team members. These factors directly increase the performance level of the team whereas team leader play an important role of facilitator in communicational web. All the participants strongly agreed the importance of the communication and its effectiveness which leads to conclusion that more the message conveyed more the outcome from the cross-functional team.

5.2 Effectiveness of communicational tools

Since, previously not so much research has been on the effectiveness of the communicational tools therefore author chose to adopt an abductive research approach in this part of the research work.

With the help of data interpretation, it can be recognized that physical appearance has more value to the communications than other communicational tools. Emails are faster and need less time to communicate but they also generate the ambiguous and non clear situations of communications.

Following diagram shows the weight that has been given by the participants during the interviews.



Figure 9; Effectiveness of communicational tools used in cross-functional teams (Source: Interview data inscription)

The figure 8 shows that effectiveness and validity are reciprocal to each other. With the increase of effectiveness tool, validity is questionably decreases. The possibility of regenerating a statement increases the validity of the communicational tool. For instance, if the team leader changes the strategy or time line of a project, it is more valid if all the team members receive the following instructions by email after face to face meeting. Figure is based on the interview data showing how interviewees expressed their experience towards the questions related to communicational tools and effectiveness.

Emails

An effective way of communication when comes to authorize and authenticate the statement but it pertains the drawbacks of misleading and unclear situations. According to the interview data emails contribute very less to clear the ambiguities between the team members and team leader. Traditionally, team leaders or managers write emails with tasks and details of the project or assignment given to the team members but not all the information can be delivered with emails because questions raised cannot be addressed right away. It is a time saving tool but less efficient than other communicational tools.

Phone calls

Second best preferred tool of communication selected by the interviewees is phone calls. Phone calls provide facility to address the raised question in the team members right away or at least noticed for correspondent actions. Ease of access and fast approach to solve a problem are advantage of phone calls. The drawback of phone calls as communicational tool is the missing of the facial and body gesture which is an important part of communications. Another drawback of phone calls is the chances of forgetting some part of communication and since it is not documented therefore its authenticity is also questionable by other team members

Face to face

Most preferred tools of communication selected by the participants is face to face communication. This communicational tool is very effective because it provides the opportunities to handle the situation of any confusion or doubts between team members precisely and accurately. It has been found out that team leaders prefer to arrange meetings to set goals and answer the questions related to the projects. The effective way of clearing the problems between the team members since everyone has a chance to speak out the problems they are facing while executing their responsibilities. Although face to face meetings are very effective when it comes to outcome of the communications but at the same time it is time consuming since team members and team leader have to have time allocated for meetings out of their daily work schedule.

Virtual presence

An alternative communicational tool to the face to face meeting, as well as sufficient enough to gives the same feeling as provided by physical appearance. This medium of communication allows team members/leader to participate in the meetings without the problem of geographically distributed team members. Interviewee team leaders describe this tool very effective when their teams are not present under the same shed but they want all the team members to participate in the communication to discuss their problems and find out the solutions. Skype and Face time are mostly softwares used for virtual communications. This tool has more effectiveness as compared phone calls since participating team member or team leader can actually see each other and their body gestures. This communicational tool provides edge to team leader to observe team members and their communicational contributions to solve the issues in the projects and allocate the responsibilities.

Organizational portal

Some of the participants describe their way of communication with team members with the communicational portal provided by the organizations. This tool can be perceived similar to emails. This tool required special training to understand it use which is cost consuming for organizations. To use this tool, organizations have to pay the service provider annually. Along with that it has been narrated that the excess to this communicational tool is mostly in the organization and as soon the team member leave the office this communicational tool become redundant. Advantage of this tool is presence of all team members at one platform which provides ease of delivering message to all team members at same time.

Social media

Since social media is quite recent in cross-functional team communication therefore it has not shown in the graph and only one team leader described its latest use in the organization which is under construction. Nevertheless, it is a promising finding towards cross-functional team communication especially due to its availability and excess to every member in from of mobile phones and tablets. The perspective of this communicational tool is the convenience for the team members to explain the situation without having thoughts of hierarchal differences.

“you know it works really well and the same way when someone upload a status on Facebook they don’t think about who is going to read this and what will be their reaction, they just say it what they want to say and the best way to make a team member participate in communication is giving the opportunity to participate”

According to the participant they are going to invest in Facebook communicational and it will be cheaper than other same kind of communicational tools.

5.2.1 Situational dependency for communicational tools

The participants choice of communication of physical appearance as the best way of convey and receive the feedback and problem solving but there has been some case where they emphasized choice of communicational tool on the situation. The selection of communication tool and its dependency on the situation is relatable to the situation in which communication is conducted. For instance, if the project is getting delayed or customers are asking for refunds then it is better to take the discussion directly (face to face) rather than writing email and waiting for the reply.

“The best if I chose is for my team to communicate is to gather them all under one roof but if it not possible make sure they are present in the meeting via phone call or online calls (...)”

Choice of communication is also highly depend on the organizational structure. Social media is one communication tool which partial in modern organizational communications. Participant from one organization revealed the importance of the social media communication in their organization. Facebook is one important way of communication in their organization according to one team leader that was interviewed. Some team leaders arrange weekly meetings other believe in the writing communication *e.g.* emails which is pertain to organizational culture of communication. According to one of the participant it is ought to take the notes of the meeting and at the end of the meeting an email from the team leader about the decisions that has been made during the meeting. Even though most the participants described emails as a confusion creating medium of communication but still official statement or decision distributed with emails between the team members.

5.3 Hierarchal impact

In Scandinavian countries, hierarchy does not impart a big difference on the communicational attributes. Five out of six interviewees said they have never felt any hierarchal pressure while speaking out in a meeting and they denied the chances that communication between the team members, team manager or team leader can be hindered by the hierarchal difference. One interviewee said it exists but it's invisible. Most of the time team members are scared inside to express the problems because they think that their bonus are dependent on the team members/leader and if he/she ought to find a solution for the communicational problem they mostly tried to find an alternative way to express it. According to McCalman, (1996) hierarchy in team members hinders the performance of the cross-functional teams. The data collected from interviews differ from the theory and shows no effect of hierarchal impact on communications and performance of cross-functional teams. The difference of research findings and theory can be due to geographical locations since organizational structure are different in different countries.

“I have made my way up to project leader from a blue color job. While I was working at that position I was thinking deep down if I would say something which does not please my boss I might have loss the promotion and bonus. Now while I am team leader I know these things and I tried to give the freedom for my team members to speak out and communicated the problem they are facing. For this reason we have launched a social media communicational tools at work because it is fact that user who post something on the social media is not scared of the person who is reading this on the other side”

Nevertheless, team leader pertain to have the right approach to overcome these kind of hierarchal impact on the team communicational barriers which reduce the satisfaction of the team members and willingness to participate in the communicational sessions. Presence of hierarchy in an organization is situational as in some organization it is necessary to follow the chain of command. But, in case of cross-functional team the chain of command actually sometimes reduce the speed of the projects.

5.4 Time factor

Time can be a crucial factor in the team communication attributes that's why participants were asked about the effect of time on the communication. For instance, if team meetings/communication sections has been conducted in an environment of rush there is chances of misunderstanding between the team members. To avoid such ambiguous situation, it is important to give sufficient amount of time for each individual present in the meeting to speak out the opinion or problem he/she has been facing in the project. The hidden pressure of conduction of meeting in certain time frame can be an important factor which affects the team's communicational attributes. In the best scenario, team leader get to take the responsibility to allocate the time for the meeting so that all the team members find it sufficient to convey the message. The data from the interviews shows that all the participants were satisfied with the time given for the communications regardless of what tool of communication that has been used. Time factor for selection of communications is dependent on the organizational culture and overall culture of the region. For instance, in Nordic countries organization give much time to meetings which is opposite of quick communicational sessions. Whereas, in Eastern countries meetings are mostly quick and time provided

by the organizations for meeting is not much. Author has been working himself and has experienced the dilemma of lack of time intervals for communicational sessions.

6 Conclusion

The research work was conducted to investigate the communicational attributes and communicational tools used by cross-functional teams. The conclusion for the research work will be based on the literature study and empirical data collected by interviews.

Author has led the research work in two directions *i.e.* communicational attributes and communicational tools in cross-functional teams. From the analysis it has been found out that cross-functional team has high dependency on communications. Communications is important not only with the team members, but with the team leader. Team leader contribute as a facilitator in the team communications. Cross-functional teams are consists of several members from different departments and each department mostly provided by a departmental manager. When a cross-functional team is formed, team leader role implies to lead the team and mostly it is also known as project manager.

Cross-functional teams are known to work independent of departmental managers and required less management compare to conventional teams but team leader has a pivotal role in the team communications. It has been observed that team leader ought to create an environment of communicational trust within team members. Frequency of communications as well as coordination and cooperation of team members is influenced by team leader. Involvement of every team member in communication is directed by team leader and how he/she creates the climate of communication. Satisfaction of working in team is important for cross-functional team members. The satisfaction can be improved with the increase of frequency of communication between the team members and team leaders as well as with the quality of communications. It can be conclude that team members become more comfortable to communicate with passage of time. Newly built cross-functional teams have less satisfaction level than teams that have working from long time together. Since old teams have had delivered and executed some projects together which increase the performance of the team members which eventually increase the satisfaction level of the team members. Communicational satisfaction also increases when all the team members feel freedom of communication. Team members contribution to projects outcome can be derived by the increase of cooperation and coordination between the team members. By increasing coordination and cooperation in the members better information flow can be achieved which enhance trust within team. These factors have dependency on the communicational formality and frequency.

Time intervals for the communications is crucial factor but as far as in this research work it has been observed that participants were satisfied with time given specially in meetings. Less time provided for meetings leads to situations where not all the members participate fully which can be devastating in future outcomes. Since in Sweden there is not big hierarchal influenced structure in organizations therefore it has been concluded that team members do not consider hierarchal pressure in communications.

The research work also covers the study about the communicational tools used by cross-functional teams widely and correspondent effectiveness. From the analysis, it have been concluded that tools which are offers more human interference are proven to be more successful towards the outcomes of communications. Term such as email managers are not promising while working as leader/manager in cross-functional teams. Nevertheless, meetings with team members fruits better than just sending emails but level of authenticity of a statement can be related to written documents circulate in team so everyone well understand.

Social media communications are new in the organizations but getting the attentions of the management. It is cheaper and faster than conventional communicational ways. The possibility of communicational gibberish can be a potential drawback of social media tools but it yet to be discovered to which extent it these communications stay relevant to the course.

7 Discussion

The area of communicational attribute in cross functional team is very large to cover in this research work. There are many factors which have not been touched due to the time limitation of this study. Social media communications are grabbing attentions of organizations and future communicational ways will be different than present ones.

7.1 Limitation of study

Since this study has been conducted in Sweden, it limits the investigation of communicational attributes to one country. There are possibilities of cultural and organizational behavioral changes with the geographical locations which are not covered in this research work.

This study limits the investigation of communicational attributes to cross functional team which are already formed. Communicational problems are different in newly formed teams and old ones. A comparison of how differently team members communicate with time can be performed in different research work. The technical backgrounds of the team members have not been considered due to limitation of the availability of the interviewees.

7.2 Future Research

Due very less availability of literature on communicational tools in cross-functional teams, it can be proposed that more research on communicational tools will help to understand the efficiency of particular tool. Social media communicational tools are cheaper and faster than conventional tools. However, there are vast areas which can be under investigation to evaluate the social media tools. Author can suggest future research in the area of social media communication, practicality and authenticity. Furthermore, a separate research study on every communicational tool can be performed in separate research.

References

2008. Getting Everyone on Board: The Role of Inspirational Leadership in Geographically Dispersed Teams. *Organization Science*, 20, 240-252.
- ALLEN-MEARES, P. & LANE, B. A. 1990. Social Work Practice: Integrating Qualitative and Quantitative Data Collection Techniques. *Social Work*, 35, 452-458.
- ANCONA, D. G. & CALDWELL, D. F. 1992. DEMOGRAPHY AND DESIGN: PREDICTORS OF NEW PRODUCT TEAM PERFORMANCE. *Organization Science*, 3, 321-341.
- ANDERSON, S. C. 2000. The globally competitive firm: Functional integration, value chain logistics, global marketing, and business college strategic support. *Competitiveness Review*, 10, 33-45.
- ANONYMOUS 2003. Meeting the challenges of cross-functional teams: The key role of creating a climate of trust. *Human Resource Management International Digest*, 11, 34.
- BAYKASOGLU, A., DERELI, T. & DAS, S. 2007. PROJECT TEAM SELECTION USING FUZZY OPTIMIZATION APPROACH. *Cybernetics and Systems*, 38, 155-185.
- BOERNER, S., SCHÄFFNER, M. & GEBERT, D. 2012. The Complementarity of Team Meetings and Cross-Functional Communication: Empirical Evidence From New Services Development Teams. *Journal of Leadership & Organizational Studies*, 19, 256-266.
- BROWN, S. L. & EISENHARDT, K. M. 1995. PRODUCT DEVELOPMENT: PAST RESEARCH, PRESENT FINDINGS, AND FUTURE DIRECTIONS. *Academy of Management Review*, 20, 343-378.
- BRUNELLI, M. A. 1999. How Harley-Davidson uses cross-functional teams. *Purchasing*, 127, 144-148.
- BUNDUCHI, R. 2009. IMPLEMENTING BEST PRACTICES TO SUPPORT CREATIVITY IN NPD CROSS-FUNCTIONAL TEAMS. *International Journal of Innovation Management*, 13, 537-554.
- CHEN, Y. & LI, L. 2006. Deriving information from CRM for knowledge management—a note on a commercial bank. *Systems Research and Behavioral Science*, 23, 141-146.
- CHIU, P. A. S. F., TSENG, P. J. M. L., WU, D. G. K. J., SAARANI, C. R. B. & BAKRI, N. 2012. ASIA PACIFIC BUSINESS INNOVATION AND TECHNOLOGY MANAGEMENT SOCIETY Examining The Technical and Non Technical Member's Participation in Cross-Functional Teams: A Case Study. 40, 187-196.
- CHRISTENSEN, J. O. 2011. Encyclopedia of research design.
- COBB, A. 2012. Thousand Oaks
- Thousand Oaks, California: SAGE Publications, Inc. C1 - Developing Project Teams C2 - pages 113-134.
- COOPER, R. G. & KLEINSCHMIDT, E. J. 1994. Determinants of timeliness in product development. 11, 381-396.
- D'O'BRIAN, J. 1994. Cross-functional teams build a 'big picture' attitude. *Supervisory Management*, 39, 1.

- DARAWONG, C. 2015. The impact of cross-functional communication on absorptive capacity of NPD teams at high technology firms in Thailand. 26, 38-44.
- DE ABREU, A. & ALCÂNTARA, R. L. C. 2015. SUPPLY CHAIN MANAGERS: PROFESSIONAL PROFILE AND THE ROLE IN THE CROSS-FUNCTIONAL INTEGRATION OF SUPPLY CHAIN MANAGEMENT. *Independent Journal of Management & Production*, 6, 44-63.
- DECARLO, D. 1999. Leading a cross-functional team. *Hydrocarbon Processing*, 78, 89.
- DUBOIS, A. & GADDE, L.-E. 2002. Systematic combining: an abductive approach to case research. *Journal of Business Research*, 55, 553-560.
- E. RANDEL, A. M. Y. & JAUSSE, K. S. 2003. FUNCTIONAL BACKGROUND IDENTITY, DIVERSITY, AND INDIVIDUAL PERFORMANCE IN CROSS-FUNCTIONAL TEAMS. *Academy of Management Journal*, 46, 763-774.
- EASTERBY-SMITH, M., THORPE, R. & JACKSON, P. 2015. *Management and business research*.
- EDMUND, H. & MIKE, N. cross-functional team. 'Oxford University Press'.
- ETTLIE, J. E. & SHRIVASTAVA, P. 1996. The Perpetual Enterprise Machine: Seven Keys to Corporate Renewal Through Successful Product and Process Development. *Academy of Management Review*, 21, 294-298.
- FITZPATRICK, E. L. & ASKIN, R. G. 2005. Forming effective worker teams with multi-functional skill requirements. *GroupTechnology/Cellular Manufacturing*, 48, 593-608.
- GHOBADI, S. & D'AMBRA, J. 2013. Modeling High-Quality Knowledge Sharing in cross-functional software development teams. *Information Processing & Management*, 49, 138-157.
- GOULDING, C. 2002. *Grounded Theory : A Practical Guide for Management, Business and Market Researchers*, London, GB, SAGE Publications Ltd.
- GÖRAN, S. 2009. A counter-intuitive view of the deductive research process: Clockwise versus anti-clockwise approaches. *European Business Review*, 21, 191-196.
- HENKE, J. W., KRACHENBERG, A. R. & LYONS, T. F. 1993. Perspective: Cross-functional teams: Good concept, poor implementation! *Journal of Product Innovation Management*, 10, 216-229.
- HSIEH, P. J. 2010. Cross-functional team selection concerning members' cooperative effects and capabilities overlap. *Systems Research and Behavioral Science*, 27, 301-318.
- JACKSON, S. E., JOSHI, A. & ERHARDT, N. L. 2003. Recent Research on Team and Organizational Diversity: SWOT Analysis and Implications. 29, 801-830.
- JOHNSON, A. M. & LEDERER, A. L. 2005. The Effect of Communication Frequency and Channel Richness on the Convergence Between Chief Executive and Chief Information Officers. *Journal of Management Information Systems*, 22, 227-252.
- KACMAR, K. M., ZIVNUSKA, S., WITT, L. A. & GULLY, S. M. 2003. The Interactive Effect of Leader-Member Exchange and Communication Frequency on Performance Ratings. *Journal of Applied Psychology*, 88, 764-772.
- KAPBORG, I. & BERTERÖ, C. 2002. Using an interpreter in qualitative interviews: does it threaten validity? 9, 52-56.

- KATZENBACH, J. R. & SMITH, D. K. 1993. The discipline of teams. *Harvard Business Review*, 71, 111-120.
- KLARNER, P., SARSTEDT, M., HOECK, M. & RINGLE, C. M. 2013. Disentangling the Effects of Team Competences, Team Adaptability, and Client Communication on the Performance of Management Consulting Teams. 46, 258-286.
- MAJCHRZAK, A., MORE, P. H. B. & FARAJ, S. 2011. Transcending Knowledge Differences in Cross-Functional Teams. *Organization Science*, 23, 951-970.
- MARKHAM, S. K. & GRIFFIN, A. 1998. The Breakfast of Champions: Associations Between Champions and Product Development Environments, Practices and Performance. *Journal of Product Innovation Management*, 15, 436-454.
- MCCALMAN, J. 1996. Lateral hierarchy: The case of cross-cultural management teams. 14, 509-517.
- MCDONOUGH, E. F. 2000. Investigation of Factors Contributing to the Success of Cross-Functional Teams. *Journal of Product Innovation Management*, 17, 221-235.
- MCDONOUGH, E. F. & BARCZAK, G. 1991. Speeding up new product development: The effects of leadership style and source of technology. 8, 203-211.
- MCDONOUGH, E. F. & LEIFER, R. P. 1986. Effective control of new product projects: The interaction of organization culture and project leadership. 3, 149-157.
- NADA, K. K., EDDY, L. & ANDREW, K. 2006. Consultant's role: a qualitative inquiry from the consultant's perspective. *Journal of Management Development*, 25, 416-500.
- PARKER, G. 2003. Leading a Team of Strangers. *T+D*, 57, 21.
- PINTO, M. B., PINTO, J. K. & PRESCOTT, J. E. 1993. Antecedents and Consequences of Project Team Cross-functional Cooperation. *Management Science*, 39, 1281-1297.
- PROEHL, R. A. 1996. Enhancing the effectiveness of cross-functional teams. *Leadership & Organization Development Journal*, 17, 3-10.
- RABIONET, S. E. 2011. How I Learned to Design and Conduct Semi-structured Interviews: An Ongoing and Continuous Journey. *The Qualitative Report*, 16, 563-566.
- ROSENTHAL, M. 2016. Qualitative research methods: Why, when, and how to conduct interviews and focus groups in pharmacy research. 8, 509-516.
- SANG-LIN, H. 1993. Product Development Performance: Strategy, Organization & Management in the World Auto Industry. (Book Review). *Interfaces*, 23, 140-141.
- SETHI, R., SMITH, D. C. & PARK, C. W. 2001. Cross-Functional Product Development Teams, Creativity, and the Innovativeness of New Consumer Products. *Journal of Marketing Research (JMR)*, 38, 73-85.
- SHAHLA, G. & JOHN, D. A. 2012. Knowledge sharing in cross-functional teams: a cooperative model. *Journal of Knowledge Management*, 16, 285-301.
- SHEILA SIMSARIAN, W. 2002. Leadership and trust facilitating cross-functional team success. *Journal of Management Development*, 21, 201-214.
- SHI-JIE, C. & LI, L. 2004. Modeling team member characteristics for the formation of a multifunctional team in concurrent engineering. *IEEE Transactions on Engineering Management*, 51, 111-124.

- STOLLER, J. April, 2014. How to make a cross-functional team work. *The Globe and Mail*.
- SZULANSKI, G. 2000. The Process of Knowledge Transfer: A Diachronic Analysis of Stickiness. 82, 9-27.
- THAMHAIN, H. J. 1990. Managing technologically innovative team efforts toward new product success. 7, 5-18.
- THATCHER, S. M. B. & ZHU, X. 2006. Changing Identities in a Changing Workplace: Identification, Identity Enactment, Self-Verification, and Telecommuting. 31, 1076-1088.
- THORNHILL, S. 2006. Knowledge, innovation and firm performance in high- and low-technology regimes. 21, 687-703.
- TSENG, T.-L., HUANG, C.-C., CHU, H.-W. & GUNG, R. R. 2004. Novel approach to multi-functional project team formation. 22, 147-159.
- VAN KNIPPENBERG, D., DE DREU, C. K. W. & HOMAN, A. C. 2004. Work Group Diversity and Group Performance: An Integrative Model and Research Agenda. *Journal of Applied Psychology*, 89, 1008-1022.
- WOODS, L., PRIEST, H. & ROBERTS, P. 2002. An overview of three different approaches to the interpretation of qualitative data. Part 2: practical illustrations. *Nurse Researcher*, 10, 43-51 9p.
- YIN, R. K. 2011. *Qualitative Research From Start to Finish, 2nd Edition*.
- YING-JUNG, Y. E. H. & HUEY-WEN, C. 2005. TEAM COMPOSITION AND LEARNING BEHAVIORS IN CROSS-FUNCTIONAL TEAMS. *Social Behavior & Personality: an international journal*, 33, 391-402.
- ZIRGER, B. J. & HARTLEY, J. L. 1996. The effect of acceleration techniques on product development time. *IEEE Transactions on Engineering Management*, 43, 143-152.
- ZIRGER, B. J. & MAIDIQUE, M. A. 1990. A MODEL OF NEW PRODUCT DEVELOPMENT: AN EMPIRICAL TEST. *Management Science*, 36, 867-883.
- ZOLIN, R., HINDS, P. J., FRUCHTER, R. & LEVITT, R. E. 2004. Interpersonal trust in cross-functional, geographically distributed work: A longitudinal study. 14, 1-26.

Appendix 1

Interview question for team leaders/managers

Q1	What is your leadership style
Q2	How do you communicate with cross-functional team members
Q3	What are the tools you use for the communication
Q4	Which tool you think is most effect way of communication
Q5	How important you think communication is in team performance
Q6	Does hierarchy difference between team members affect team freedom of communication
Q7	Do you observe communication quality and frequency between team members
Q8	What measures you take when you see there is communication flaws between team members
Q9	What kind of challenges/drawbacks attached with using tools of communication

Interview question for team members

Q1	What is your role in team
Q2	How does cross-functional team communicate
Q3	Who decide what kind of tools should be used in communications (Skype/Phone/emails etc)
Q4	Do team members satisfied with using particular tool for communication in your team
Q5	Which tool do you think is most efficient
Q6	Do you have any preference of tool for communication
Q7	How often you communicate with team members and team leader
Q8	How important communication is in cross-functional team performance
Q9	Does hierarchy difference between team members affect team freedom of communication
Q10	Do you think team leader contribute important role to promote communication
Q11	Are you satisfied with the quality of the communication between the team members
Q12	How important is the time factor in communication

Appendix 2

