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# **Communication Strategy in Projects**

High Technology Sector Viewpoint



Master's thesis

Master's degree in Entrepreneurship and Business Competence

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ABSTRACT

The thesis focuses on high technology product developments projects and their communication. The key idea is to define special features of project management in communication and utilise those in building communication strategy for projects. Reviewed literature emphasizes project management. Other theoretical fields of study are: communication process, communication strategy, project communication management and subcontracting in respect to communication.

The research questions have been defined as: 1) What are special features of communication in high technology project management? 2) What kind of communication strategy is most efficient in projects? 3) How can communication strategy execution be followed up in projects?

In order to find out the answer to research questions it was necessary to define the process of communication, to define special features of project communication, to define what kind of strategy works best in projects and to define how to measure and improve execution of communication strategy in projects.

Utilised methodology is qualitative research where interviews have been chosen as a method to examine the different aspects of project environment, communication practices and best practices.

The most notable special features of project environment are the continuous changes, schedule pressure and teams of specialized expertise. Environment = [Uncertainty + Unique Expertise] x Speed (Chin 2003, 3). Project communication is highly affected by the utilized data management tools where Program Management Office or company management are responsible for the decisions. For a subcontracting company the tools and communication processes should follow the customers' requirements and practices if the key stakeholders are company internal the communication can be more unofficial.

**Keywords** Project management, communication, communication strategy.

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Communication Strategy in Srojects – High Technology

Sector Viewpoint

## TIIVISTELMÄ

Työ keskittyy high technology -tuotekehitysprojektien ympäristöön ja niiden kommunikaatioon. Lähtökohtana on määritellä projektihallinnan erityispiirteet viestinnässä ja hyödyntää löydöksiä projektin kommunikaatiostrategiassa. Teoriapohjana työssä on käytetty paljolti projektihallintaa. Muita viitattuja teorian osa-alueita ovat: viestintä prosessina, viestintästrategia, projektiviestinnän hallinta sekä alihankinta suhteessa kommunikaatioon.

Tutkimuskysymykset on määritelty seuraavasti: 1) Minkälaisia erityispiirteitä on high technology projektihallinnan kommunikaatioissa? 2) Millainen kommunikaatiostrategia toimii parhaiten projekteissa? 3) Millä tavalla projektien viestintästrategian toteutusta voidaan seurata?

Saadakseen vastauksia tutkimuskysymyksiin oli tarpeellista määritellä määritellä kommunikaatioprosessi, määritellä projektiviestinnän erityispiirteitä, määritellä millainen strategia toimii parhaiten projekteissa sekä määritellä kuinka viestintästrategian toteutusta voidaan mitata ja parantaa projekteissa.

Työssä on käytetty metodologiana laadullista tutkimusta valiten haastattelut metodiksi tutkia eri piirteitä projekti ympäristöstä, viestintäkäytännöistä ja hyväksi todettuja toimintatapoja.

Huomattavimpia projektitoiminnan ympäristön erityispiirteitä korkean teknologian tuotealalla ovat alituiset muutokset, aikataulupaineet ja projektihenkilöstön erikoistunut osaaminen. Ympäristö= [Epävarmuus + Ainutlaatuinen Ammattiosaaminen] x Nopeus (Chin 2003, 3).

Projektiviestintään vaikuttaa suuresti Project Management Officen ja yrityksen johdon tekemät valinnat tiedonhallinnan työkaluiksi. Alihankintayrityksissä työkalut ja viestintäkäytännöt tulisi sopeuttaa asiakasyrityksien vaatimuksiin. Jos projektin tärkeimmät sidosryhmät ovat yrityksen sisäisiä, voi viestintä olla epävirallisempaa.

**Avainsanat** Projektihallinta, viestintä, viestintästrategia**Sivut** 74 s. + liitteet 5 s.

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## 1 INTRODUCTION

This thesis is built by first on reading literature and studies on communication and project communication management, making observations in high technology business sector and collecting the results to empirics. The key idea is to define special features of project management and utilise those in building communication strategy for projects. The topic is viewed from the requirements within the project organization.

The chosen method for the thesis is qualitative approach. Most scientific studies of communication are qualitative research where the amount of data is small compared to quantitative research. Qualitative research aims to observe some phenomenon up close, detect different nuances and different possibilities for interpretations. (Viestintätieteiden yliopistoverkoston oppimateriaalit, 2012)

### 1.1 Background of the thesis

Giant global companies with fast project life-cycles and complex products prefer suppliers who can support them in several technology areas and can offer a wider range of services. The programs (project including several sub-projects) are more and more complex with a direct influence to time-to-market schedule. This will stress the importance of good program management, open and honest interaction and company performance. Relationships are cornerstones in successful project management and good strategy in communication makes complex work easier and integrates all elements seamlessly together.

As a business enabler, the role of communication is irreplaceable. Without it there would be neither production nor projects. Communication is pre-requisite to any business actions.

Projects are all about communication, and project managers have the key responsibility to hold the lines in their hands, both internally (to ensure operational excellence) and externally (to ensure understanding of customer's needs and customer satisfaction). All PMs (Project Managers) have different approaches to customer communication. In constantly changing business, for example as subcontractor for a telecommunication company, operational performance is extremely important together with being proactive and agile. But the people making business allocation decisions are human and therefore company reputation and public image/brand also do affect the decisions. Communication and relationships can save or ruin a project.

Information exchange and efficient co-operation doesn't just happen; in a proficient company communication is well organized, efficient and effective. Communication strategy clears the air, removes doubts, emphasises the meaning of planning and at best involves all participants around the same round table (IDRC, 2011).

When starting this study, the pre-assumption is that all projects might not be aware of the corporate level communication strategy and do not have a pre-planned written strategy for communication. Thus the implementation is a challenge at least. Project communication requires quite a lot from all team members but especially from the project manager. Projects require competence in communication, focus and detailed messaging of various, complex speciality areas. The project members must be able to form messages and understand communication so that everyone in the project understands even if the matter is not within their own speciality area.

This thesis collects empirical information by interviewing persons that work in a project-oriented company in high technology field. The persons were selected to these qualitative interviews to represent a comprehensive sample of project team members and their different viewpoints.

### 1.2 Objectives and research questions

The objective of this thesis is to map theory of project management in respect to communication in order to find whether it has special features that need to be taken into consideration in communication planning. Other theoretical fields of study are: communication process, communication strategy, project communication management and subcontracting in respect to communication. Combining the finding from this theory-array together with the conducted interviews will form the basis for conclusions and answers to the research questions.

A big part of high technology companies' turnover comes from projects. However planning the strategic communication in these projects may be somewhat neglected. The purpose of this study is to highlight the importance of communication planning in projects and to study the fundamentals for successful communication strategic plan that can be utilized as backbone to be included in project plans.

The study is built together by binding theory and empirics into one rope under the theoretical framework heading. The research questions have been defined as:

1. What are special features of communication in high technology project management?
2. What kind of communication strategy is most efficient in projects?
3. How can communication strategy execution be followed up in projects?

The objectives are defined as:

- to define the process of communication
- to define special features of project communication
- to define what kind of strategy works best in projects
- to define how to measure and improve execution of communication strategy in projects

The study follows inductive, hermeneutical circle where understanding is gained through gathering information, processing it in order to refine it into a new synthesis. Figure 1 demonstrates the different aspect of information processing. (Boell & Cecez-Kecmanovic, 2010)

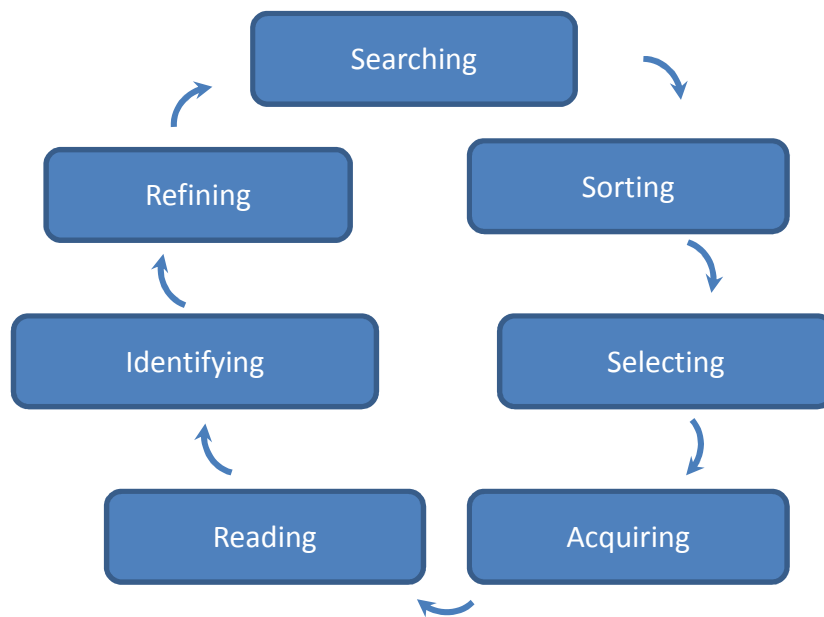


Figure 1 Hermeneutic circle of reading literature

### 1.3 Research Design

“A good research design gives the researcher confidence in the solidity of the conclusion drawn from the data” (Bechhofer & Paterson, 2000, 20). The plan of the study is to gather a representative array of theory including all elements of the study and reflect those findings in the empirical method of interviews. Empiric material should either back up or contradict the theory hypothesis and give solid guidelines for conclusions.

This thesis is based on ontological and epistemological metatheory –frame in interpretative-hermeneutical paradigm. Qualitative methodology has been selected to be used because of the nature of the research. Communication and its implications to project management cannot be measured with only numbers, therefore qualitative approach is selected. To be more specific interviews are used as method to collect information.



The advantage of this kind of qualitative research is that it allows a focus on a specified phenomenon or research problem (Hirsjärvi & Hurme 2001). Since project management and communication cannot be taken out of their context as they are clearly intertwined, qualitative method is applicable to study implications of both together.

The theory is addressed in chapters 2 and 3. Chapter 2 presents the relation of communication and project management, and chapter 3 reviews and describes literature concerning communication strategy. Chapter 4 is based on empirical research meaning it presents the results and findings from conducted interviews. Findings, results and conclusions are all gathered under chapter 5.

### 1.4 Limitations and assumptions

The business sector considered in this thesis is complex high technology product development environment. Due the rush to get new and desirable products into markets, most of the work is done in projects. Assumption is that most companies in these kinds of markets operate in global markets and thus the teams allocated to projects are multinational. This thesis does not include the aspect of foreign language skills.

The dynamic and fast-moving complex product creation projects also most of the time involve several subcontractors and networks of different technology partners. The growing trend of the business is eco-partnering i.e. developing the network relationships to long-lasting and mutually beneficial level.

Corporate communication as a term includes e.g. business communication, organizational communication, management communication and public relations (Väänänen, 2010, 22). Communication in this thesis is focused on project related internal communication (internal communication and project related external communication); external communication such as marketing etc. is only scratched from the surface. Internal communication is also stretched to include the aspects of project communication with its suppliers and other stakeholders directly involved with the project success.

### 1.5 Key concepts

*Communication* has several definitions in different contexts. Pathi (2008, 1) defines communication as “an exchange of facts, ideas, opinions or emotions and as a way that individuals or organizations share meaning and understanding with one another”. But in addition to this communication is also bidirectional. Väänänen (2010, 21) uses a more complete definition by Galanes (2004) in her research: “*Communication is a process in which signals produced by people are received, interpreted, and responded by other people*”.

*Communication strategy* is defined as the definitions, choices and objectives that are implemented and applied using its communication resources in order for the company to prosper now and in the future. In the strategy the company sets its course aligning its central targets and actions. Communication strategy is a strategic plan for communication. (Juholin, 2009, 69)

*Stakeholders* are “key components” for a company: they offer their knowledge, information, money or vision to the use of the company. In return they expect the company to repay their needs for example financially or ethically (for example paying salary/dividend or preserving the nature around them). (Juholin, 2009, 199)

Subcontracting is defined as the delegation to a third party of some or all the work that the company has contracted to do. The responsibility to deliver what has been ordered will still remain within the original contract party (Qfinance, 2011).

The PMI Body of Knowledge defines a *project* as a “*temporary endeavor undertaken to create a unique product or service*” (PMI, 2000). Project management discipline has expanded its scope towards multi-project management, frequently referred to as project portfolio management (Korhonen 2003, 110).

“*Knowledge Management* is the process through which organizations generate value from their intellectual and knowledge-based assets” is the definition of knowledge management by CIO after saying that there is no universal definition of knowledge management. (CIO, 2012)

## 2 PROJECT MANAGEMENT AND COMMUNICATION

The Project Management Institute (later PMI 2004) defines a project as a “temporary endeavor undertaken to create a unique product or service”. Temporary means that the project has a beginning and end. The length of the span can vary from short periods to years, but projects are not ongoing efforts. Each project creates unique deliverables: products, services or results. One feature of a project is also its progressive elaboration meaning that it is developed by steps and continued in increments. (PMI, 2004)

According to a research by Project Management Institute nearly 25% of the world’s GDP is spent on projects. Project management covers several aspects of business, such as project integration management, scope management, time management, cost management, quality management, human resources management, communications management, risk management and procurement management. (PMI, 2004)

Project management discipline has expanded its scope towards multi-project management, frequently referred to as project portfolio

management (Korhonen 2003, 110). Managing portfolios means control-controlling the company's business strategy.

Project-oriented company usually utilizes projects as way of working in order to enhance efficiency, speed, cost control and management of important elements. Thus projects are like weapons of precision targeted to hit the target every time. Their management and communication need to blend together seamlessly fine-tuned.

A project is contemporary; it has a beginning and an end. It has specified targets that can be reviewed at the end of the project life cycle. The project can run as independent plan or as part of the organization's development initiatives. A project approach is usually selected to give it more focus and emphasis and perhaps resources. It must have an owner who is responsible for the end result, and a project manager to run the operative execution. (Juholin, 2008, 257)

Figure 2 represents the changing nature of high technology research and development activities. In large organizations such as in telecommunications, R&D covers everything from longer term research to short-term product development, and is not limited to product development as mostly described in management literature. (Korhonen & Ainamo 2003, 113)

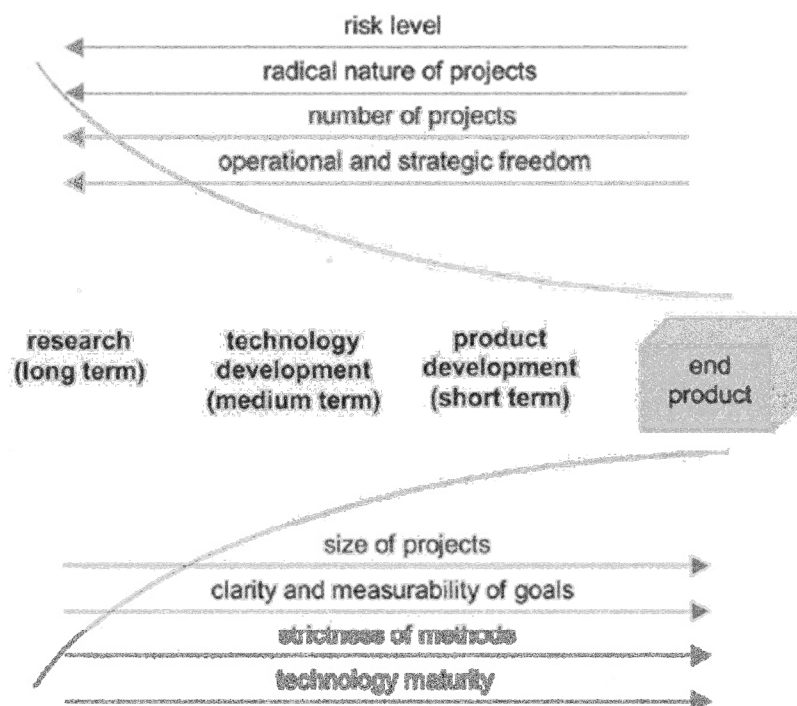


Figure 2 R&D funnel and the changing nature of R&D activities in the funnel (Korhonen&Ainamo 2003, 113)

Communication in these kinds of project varies depending on the projects style. Some projects are to be finished within short time period and thus require focus and sharp communication as there is no room for mistakes. Other projects have less stress in schedule but more in quality.

In practice normal procedure is that projects actual progress is carried out in cycles which can be called sprints. These sprints typically last from 15 to 30 days where daily action and development follow-up, meetings, tests and builds is needed. The next sprints are based on iteration carried out during current sprints making the process of improvement continuous. (Whitaker, 2009, 269-270)

Communication is a key element of project success in high technology product development projects. Communication is the link between cells, without it nothing would work. The project leader’s management and communication skills need to be in good shape to have control over various stakeholders and keep the project running towards decent lead time and productivity. Communication has also an indirect influence in project financial performance through product concept effectiveness. Figure 3 visualises the relations between stakeholders and their involvement in project success. (Brown & Eisenhardt, 1995, 346)

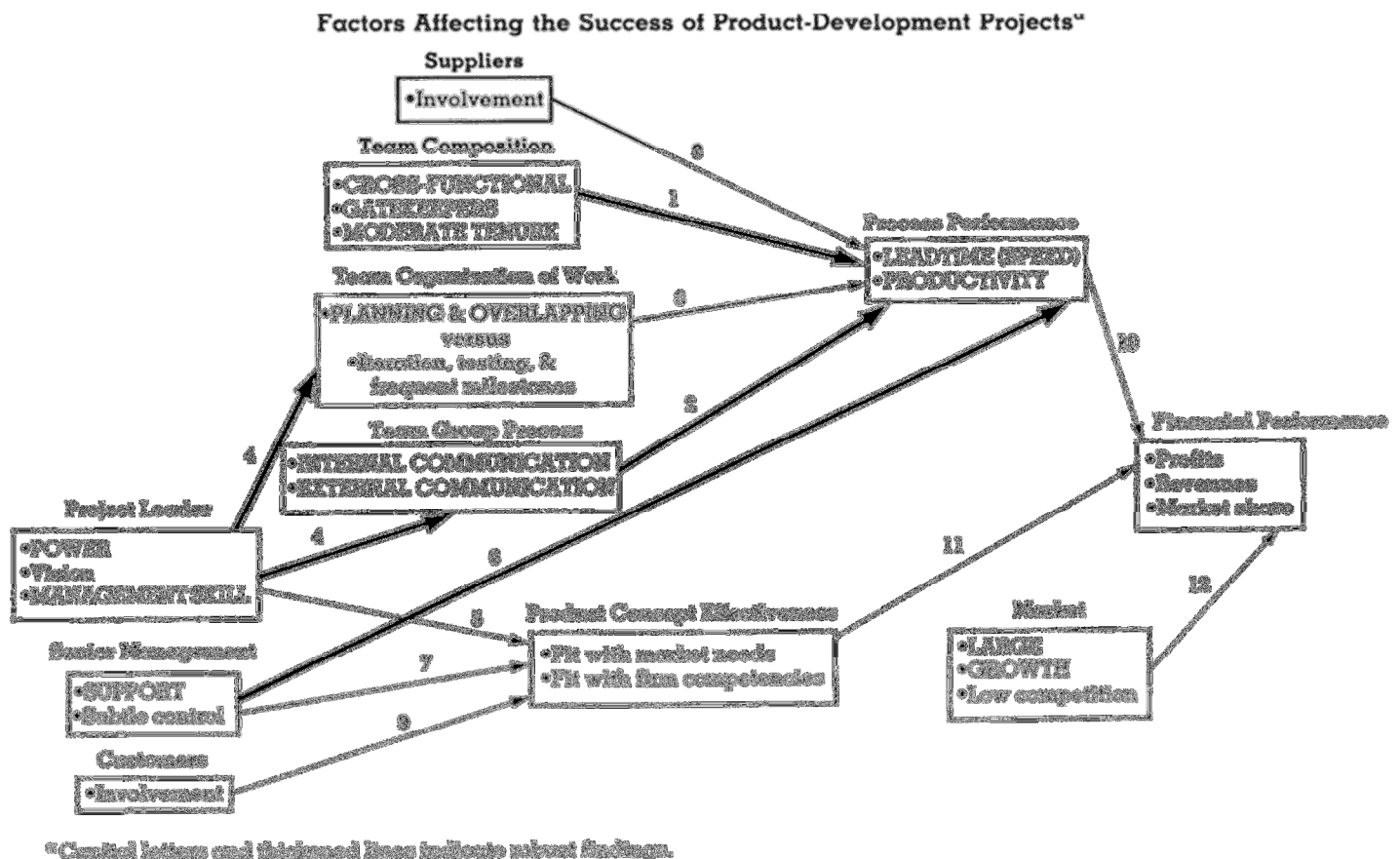


Figure 3 Factors affecting the success of product development projects (Brown & Eisenhardt, 1995, 346)

The role of the project manager in project communication is central. He/She is leading the team in integrated teamwork even he /she is not heir organizational supervisor. The project manager ties the knots with

customers and controls the communication to suppliers, customer and senior management.

Project management is team work, and the work done by one group member is a part of a larger entity targeted towards the project goal. Thus the communication also takes place between a group of people or in case of a larger project between groups. (Väänänen, 2010, 46)

The whole organization and its common communication practices and ways affect the communication inside a project and project member's activities. An organization is the source of information and resources to fulfill the given tasks and enables social integration. Project communication is highly influenced by data management systems and document and version management systems that are used in the organization. (Väänänen, 2010, 46)

Väänänen (2010) has defined different aspects affecting a project employee. One's superior, data management and other electronic media as well as the team members play a big role in the communication environment. The project team member exchanges information with the project team in order to perform his/her job either via official media e.g. face-to-face, in meetings, emails, group communication technologies etc. Or he/she can exchange messages via informal media such as chatting in the hallways or at lunch.

Ruuska (1996) continues this idea by explaining that the project team shares information and exact details to project management and the information is sharpened and focused on its way to strategic level as figure 3 presents.

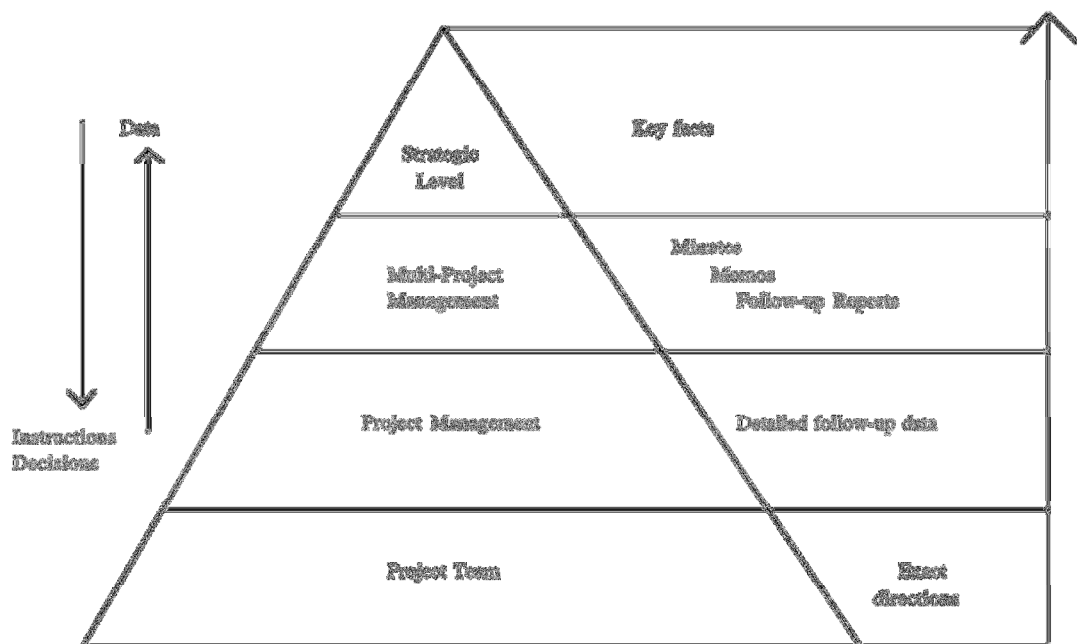


Figure 4 Information exchange in the organization (Ruuska, 1996)

A project is a supplier which supplies different kind of information to its stakeholders (Ruuska, 1996). From the project's point of view the company management is an "external" communication stakeholder: the message to management needs to be key facts presented in an understandable format and clear communication. Inside the project the team the information needs to be on-time, precise and detailed. There are also other stakeholders that are crucial for a project: suppliers, general resources, procurement department, logistics department etc.

Väänänen (2010, 129-130) concluded in her study that companies had had only limited efforts for developing project communication which resulted in communication challenges. She found as one of the most important factors to decide how to organise project communication in general: prepare communications plan and tangible instructions including roles and responsibilities.

The next part of the theory addresses communication as a process and the implications it has to project management.

### 2.1 Communication

People communicate every day in various types of ways. We communicate constantly, inevitably. It is a dynamic, continuous process where we interact. Human beings react differently and our response varies. Both parties affect each other, this is why the end result cannot be known at the beginning (Majanto, 2008). Communication is also situational and certain message in one situation may have other meanings in another situation (Väänänen, 2010, 25). In a business-oriented company communication should not just flow, but be well organized and planned as the chances for failing without it are great.

Professor Osmo A. Wiio has formed "Wiio's laws" of the usual pitfalls of communication. They are based on the commonly known Murphy's Law. Despite the black humor they are not meant to reflect pessimistic view of life but rather to map and point out the skerrys on the way. (Wiio, 2009, 9)

Wiio's laws of human communication (Wiio, 2009, 7):

1. *Communication usually fails, except by accident.* The communication coefficient of efficiency has been typically been measured to be between 0% and 5%. Most of communication is thus wasted. Even though communication is planned, human behavior is unforeseen. Models and theories are just those and cannot completely predict the real behavior of humans. (Wiio, 2009, 12-13)

1.1. *If communication can fail, it will.* If communication is given a possibility to fail, it will most certainly utilize the opportunity. If messages are formed with haste, negligence or inexperience, the communication most probably will fail. (Wiio, 2009, 53)

- 1.2. *If communication cannot fail, it still most usually fails.* Even the best of plans and executions can fail. There's a lot of room for mistakes, misunderstanding and external interference. For example the cellphone battery can run out. Or the message appealing either to reason or emotion faces resistance. (Wiio, 2009, 56)
- 1.3. *If communication seems to succeed in the intended way, there's a misunderstanding.* The receiver usually is capable of creating a meaningful entity of the messages, but the interpretation might not be at all what was originally intended (Wiio, 2009, 59).
- 1.4. *If you are content with your message, communication certainly fails.* If you are satisfied with your message, it usually means that you have not intended the message for the receiver but for yourself. The most important rule in communication is to remember to target and plan the message for the recipient. You should consider the recipients previous knowledge of the issue, his/her opinions and interest in the matter. Some issues can raise the receivers internal defense-mechanisms. (Wiio, 2009, 60-61).
2. *If a message can be interpreted in several ways, it will be interpreted in a manner that maximizes the damage.* Misunderstandings can cause mislead work-performances or conflicts between people. (Wiio, 2009, 62)
3. *There is always someone who knows better than you what you meant with your message.* The receiver will interpret the message based on their own experiences and may give it a completely new meaning (Wiio, 2009, 62).
4. *The more we communicate, the worse communication succeeds.* This does not mean that the less you communicate the better. Moderate is best; not too much, not too little. (Wiio, 2009, 64)
  - 4.1. *The more we communicate, the faster misunderstandings propagate.* This is a statistical statement: when misunderstandings cumulate they cause new misunderstandings. (Wiio, 69)
5. *In mass communication, the important thing is not how things are but how they seem to be.* It's not news when a dog bites a man, it's when a man bites a dog. Mass communication media are like guard dogs of the society that bark the faults, abuses and mistakes. (Wiio, 2009, 71)
6. *The importance of a news item is inversely proportional to the square of the distance.* In practice means that things happening near you (geographically, culturally or socially) are important, relevant and appealing to you. A fatal accident next corner is more interesting than a flood in India or massive airplane crash in Asia. But if one of the victims is a friend of yours nothing could be more important. (Wiio, 2009, 72)

7. *The more important the situation is, the more probably you forget an essential thing that you remembered a moment ago.* Human nature is to stress before important events and the communication situation itself hides and covers the message itself. Communication competence can be improved by practicing and repeating these situations. (Wiio, 2009, 79)

Wiio describes the usual pitfalls of communication and urges to communicate enough, not too little and not too much. The key is to shape the message according to the receiver. Naturally this is easier if there are only one or few receivers, targeting messages to a crowd is more challenging. The receiver will then decide if he/she will react or act according to the message.

The source of information is relevant to the reliability of the info in the eyes/ears of the receiver: one does not trust messages from unreliable sources. If an unreliable sender sends a reliable message, there is inconsistency, and either the perception of the message or from the sender must change. (Wiio, 2009, 58)

Strategic management is becoming more and more interaction driven. This means that the whole organization is involved in thinking how complex dependencies are grasped, controlled and at the end turned to the organizations advantages. (Juholin, 2009, 33)

The importance of communication and its strategic implications are expressed in Kamensky's strategic diamond. The success of a company in the long term can be broken down to 4 different elements: strategy, communication, competence and leadership. But none of these elements alone are enough to carry the company to prosperity, they are linked together. These four elements form the diamond of success and are all linked to the overall success of a company. (Kamensky, 2010, 28)



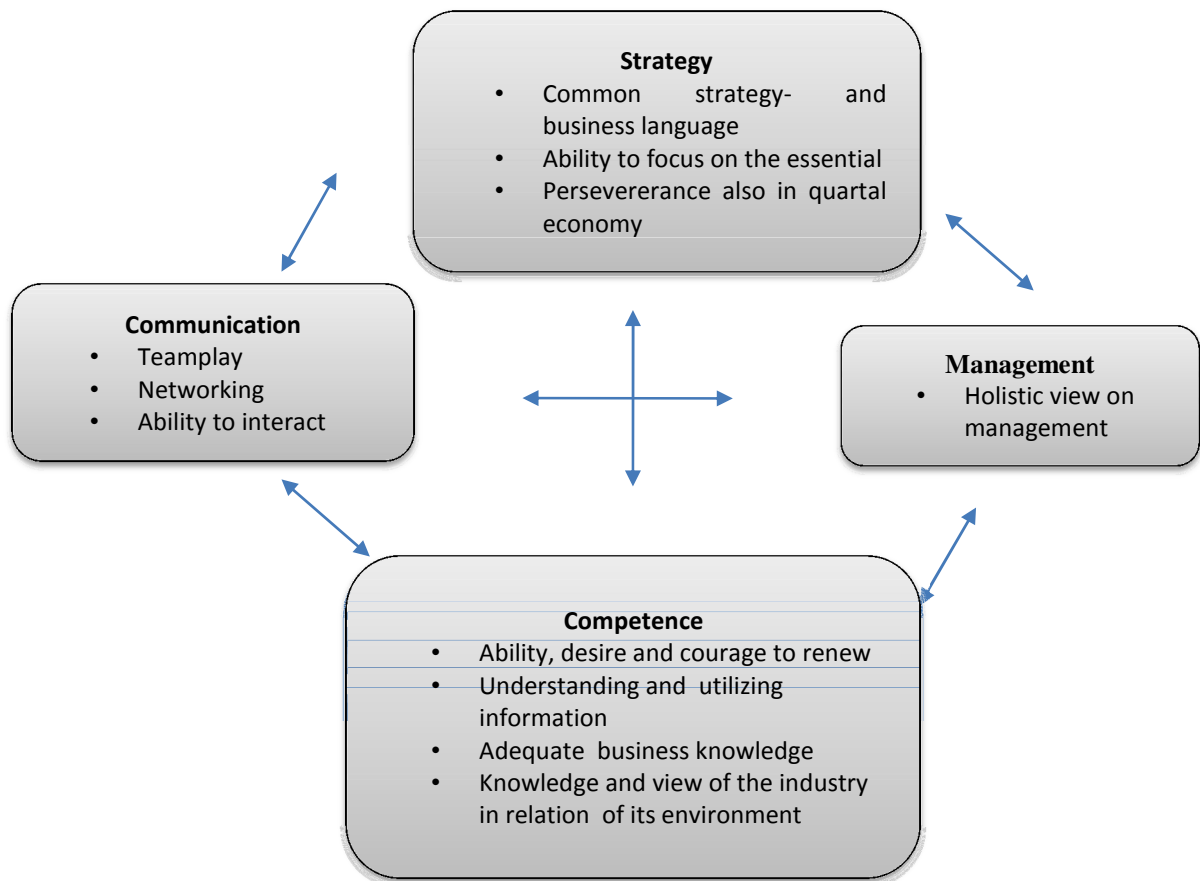


Figure 5 The strategy diamond (Kamensky, 2010, 51)

The cornerstones of Kamensky’s strategy diamond are driving forces of project management in smaller scale also. Projects needs to be strategically aligned in order to meet the customers’ expectations whether it is another company or consumers, the project’s management needs to see holistically the big picture where the project is going and be competent in execution. Efficient communication gives the boost and tools for coherent teamwork.

### 2.1.1 The process of communication

According to Boone (2000) communication has three main functions. The first one is to connect different people in and around the organization. Connecting can be via some media or direct face-to-face communication, but in order to communicate people need to be connected first. After people are connected, communication is about informing. The third important aspect of communication is to engage people. Engaging means that all parties are willing to share in the creation and implementation of ideas. (Boone, 2000, 7)

Projects are built around successful communication, not only technology as one might think in a high tech company. According to the studies more

than a half of management problems in projects are more or less caused by poorly looked-after communication (Ruuska, 1996).

Communication as a process involves 9 elements. Two of these are receiver and sender. The sender acts as a sending party and sends out a message, for example a company sending a message to its customer. The message (the set of words, pictures or symbols) is encoded i.e. put in the intended message for or symbolic for (e.g. advertising). The receiver is the party receiving the message sent by another party, for example consumer or someone from the team. The message is transmitted via certain media, the communication channel, to the receiver where it is decoded. The receiver needs to be able to understand the intended message within his/her field of experience; otherwise it has no real value to him/her/it. The response is the reaction of the receiver after being exposed to the message. Feedback again is the part of the response communicated back to the sender. The unplanned static or distortion during the message transmission is called noise. (Kotler & al:2008, 699-700)

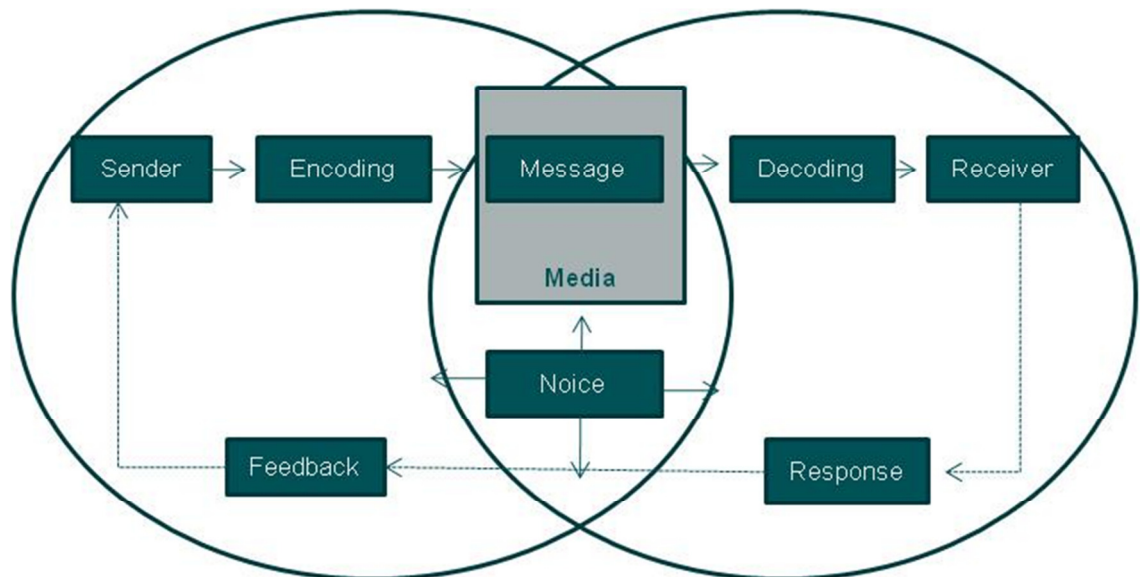


Figure 6 Elements in the process of communication (Kotler & al: 2008, 700).

Kotler's (2008) model in picture 6 points out the key factor in good communication. The senders need to be aware what audience they are targeting and what response they are expecting. They need to be good at encoding the message and take into consideration how the receiver will decode them. This model applies to project management as well as to any other part of organization culture. The message needs to be build having the expected response in mind; some interference is likely between the sender and receiver as well as in the communication channel.

There are two noticeable implications of the definition of communication. First of all communication occurs between people, the message is intermediated via some media that can be technological. Secondly communicating includes personal interpretation of the send messages. This means that communication is personal and social. At the same time

communication is transactional, meaning that both parties the sender encoding and receiver decoding simultaneously affect each other. The effect of this process should be changes in the receiver's knowledge, attitudes or in overt behavior. (Väänänen, 2010, 21)

Besides the process of communication where there is sender, receiver, a message and feedback travels between these, there is also one-way communication that is used in corporate communication. Commonly used communication media for mere informing are for example: brochures, memos, banners, newsletter etc. It is true that some of communication is one-way informing, but the need to produce results and improvement drive for interaction and engagement. (Boone, 2000, 8)

Kotler's model shown before takes into consideration the fact that the receiver also has a response to the message. In project management soliciting the feedback gotten from the receiver is the best indication of whether the chosen communication style is effective. You should be ready to adapt and change the style and delivery media of the message in case the feedback loop calls for that. If the words do not make sense to the receiver, the words should be changed. (Morris & Sember, 2008, 13)

In strategic communication words are important. Actions are needed to give the words credibility and context and to demonstrate to the organization what kind of actions are desired and expected. Words are needed to:

- create positive atmosphere
- define cultural values and norms that support strategy
- communicate the reasons for change
- set targets
- express choices
- follow-up achieving set targets
- legitimate new viewpoints
- Build trust and commitment. (Hämäläinen & Maula, 2004, 29)

Wiio (2009, 83) divides communication into three basic categories: internal communication which takes place inside an organization or an individual, target communication between individuals or organizations, and to public communication where one source sends messages to several receivers.

Leif Åberg (2000) divides communication to organizational communication and public relations. Organizational communication includes all communication and interaction within an organization whereas public relations consists of broadly all internal and external PR and interaction.

Relationship marketing is about building networks of relationships. Supplier and customer are wrapped up in what can be called "business dancing". It is a dynamic metaphor as the dance can be a waltz, samba, rumba or something else. It can also be as Peters makes it:" Today's global economic dance is no Strauss waltz. It's break dancing

accompanied by street rap. The effective firm is much more like carnival in Rio than a pyramid along the Nile”. (Gummesson, 2006, 9)

A person’s communication skills, communication competence are formed from knowledge, motivation and skills (Payne, 1998). Not only does the sender of the message need to know the context of what he/she is communicating but to know how to present the message. Rubin & al (1991, 96) has emphasized this as such: “communication competence is knowledge about appropriate and effective communication behaviors, development of a repertoire of skills that encompass both appropriate and effective means of communicating, and motivation to behave in ways that are viewed as both appropriate and effective by interactants”.

The sender is responsible for making the information clear and complete so that the receiver can receive it correctly, and for confirming that it is properly understood. The receiver is responsible for making sure that the information is received in its entirety and understood correctly. Communication has many dimensions:

- Written and oral, listening and speaking
- Internal (within the project) and external (customer, the media, the public)
- Formal (reports, briefings) and informal (memos, and ad hoc conversations)
- Vertical (up and down the organization) and horizontal (with peers) (Super-business, 2011).

Every employee in a company is interested in the facts affecting daily work and changes there might be. They should also have the right to this kind of information. Understanding the bigger picture behind the corporate mumbo-jumbo is an important aspect in building commitment and motivation. (Hämäläinen & Maula, 2004, 34)

It is the foreman’s responsibility to share information from management to the personnel. Delivering the message in the right format at the right time is up to the managers’ communication skills.

### 2.1.2 Communications competence

Communication competence consists of knowledge, motivation and skills (Payne, 1998, 50). Motivation to understand and interpret the message the way the sender has intended it is a factor that cannot be taken for granted.

Communications competence can be linked to leadership skills as communication is the key to express and implement leadership. The project manager must have competence in communication to convey the project strategy clearly and efficiently. Their role includes motivational aspects: getting the team working together towards a common goal requires commitment and motivation.

Compared to basic organisational operations project operations require faster management as they are much more dynamic. Project team members need to relate to the project objectives as soon as possible and they need to be aware of the overall project objectives and their sub-targets within the project. The project manager's task is to ensure that necessary means to achieve set targets are both defined and acquired. The key challenges of leadership can be defined to include:

1. Ability to generate meaning and importance to work. This includes the ability match the tasks of organization to create added value to customers and simultaneously are up to the personnel valuation.
2. Ability to create and maintain organization values.
3. Ability to clarify and communicate the basic ideas and operational philosophy metaphors.
4. Ability to generate well-functional tools for new situations.
5. Ability to design tasks that are wide and include both operational planning and execution.
6. Ability to create co-operation towards objectives. This includes building trust and team spirit with simultaneously strong independent roles which help to drive co-operation. (Jalava & Virtanen, 2000. 23)

Juholin (2008, 31) includes self-expression (oral and written), networking and relationships (with partners and stakeholders), control and development of communication tools and the strategic ability utilize all the before mentioned tools as the basic foundation of communication competence. Hargie et al. (2004, 17-18) classify these as: intrapersonal, interpersonal, network/organisational and macrosocietal levels.

Barriers to communication affect getting the message through as intended. People view the world from personal experiences that are affected by their ages, nationalities, culture, education, occupation, sex, status, personality and so on. Due to differences in perception, the message may cause problems in communication. People are also quick to jump into conclusion: we often see what we expect to see rather than what is actually there. Difficulties in self-expression are clear obstacle in communication, but these competencies can be developed by careful preparation, planning and expanding one's vocabulary. Some problematic issues could be avoided by avoiding stereotyping e.g. different cultures. One barrier to communication is lack of knowledge or very different backgrounds. In these cases communication requires skill to be aware of the discrepancy between the levels of knowledge and communicate accordingly. (Stanton, 2004, 4)

Leon Festinger has represented a well-known cognitive dissonance theory that explains why people disregard unpleasant information. According to the theory we drive to reduce internal inconsistency by rejecting unpleasant and/or useless information. People have a motivational drive to reduce dissonance by altering existing cognitions or adding new ones to create consistency. (Wiio, 2009, 14)

From project point of view communication requires quite a view from each project members. More and more global companies have project

teams gathered from all over the globe thus are geographically distributed. This disreputably leads to multicultural environment, many national cultures being involved, even though the project might not be multisite. Besides this project members' communication competence is being tested with involvement in more than one project (multi-project). (Väänänen, 2010, 11)

It is the Project Manager's task to ensure that project internal actions are based on realistic perception of the environment and that the outside steering is based on truthful and actual state of the project. Manager is the interface between the project and outside environment such as company management. This requires sharing needed, adequate and structured information to different shareholders when needed. Managing a job as leadership interface means facing some distance, solitude and ambiguity. A leader cannot be an ordinary team-member even though his/her relationships with team-members where excellent. He/She faces difficult situations in complex situations where tolerance for uncertainty is needed. A leader usually has some buffer zone to help ensure ease in working conditions. Figure 7 demonstrates the manager's role as information distributor in projects. A Project Manager digests messages coming from outside and clarifies and sharpens information from project to outside. (Jalava & Virtanen, 2000, 92)

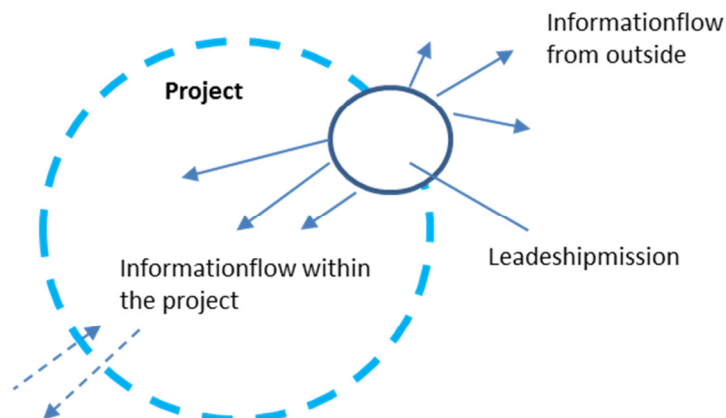


Figure 7 Manager's leadership mission in projects (Jalava & Virtanen, 2000, 92)

In high technology business products and projects themselves are complex and may involve professionals with different technical background e.g. software designers, visual designers, electronics designers, mechanical designers and system designers. Väänänen points out a fact that compared to for example construction project high technology product development projects require more cooperation and communication from each project personnel. This requires a structured plan for communication and working practices. (Väänänen, 2010, 12)

### 2.1.3 Communication channels

Communication channel i.e. the media are divided into three categories: face-to-face communication, printed media and electronic media. Printed media includes all tangible documents such as newspapers, leaflets etc. Electronic media refers to communication via some electronic device. This can be via telephone, email, databases or groupware. Electronic documents are advantageous for storing information for long-term organizational use. (Väänänen, 2010, 26)

One of the fashion terms in communication is digital convergence. The term means the “vehicle” of the information (e.g. email, television, mobile phone etc.) is not as relevant as it used to be. Technology faces convergence: you can watch TV on your mobile phone. Nowadays the information stream can travel via several channels to the receiver. (Wiio, 2009, 140) For example all project team members can read and modify project databases from all over the world with their computers, laptops or mobile phones.

In a project oriented company the communication channels are usually well considered and planned because they form the basis for efficient project operations. Best channels for project use are usually the tools that require precise, up-to-date information and where all information can be found and updated in one place. This also synchronizes the vocabulary, used terms and language.

It may seem mundane to talk about the importance of language, but it is a fact that many problems are due to communication problems. Not only languages between different countries, but also “business slang” and used vocabulary. The lack of common language makes it difficult to build a common strategy, not to mention implementing it. (Kamensky, 2010, 30)

The importance of common language in project management cannot be too emphasized. Especially if the project involves lots of technology related communication and networks, it pays off to define the common language and basic concepts in the beginning. (Juholin, 2008, 262)

There is not only one best alternative for communication method and channel. The effect of communication always depends on the limitation of each individual situation. A solution that works in one situation does not suit at all to other situations. (Wiio, 2009, 15)

Communication in organizations is divided into official communication and un-official communication. Official communication is the communication conducted along the official organization charts or composition as planned. Unofficial communication includes all the interaction within the organization that takes place outside the official structures. Organization members form communication networks to share and utilize information. Usually unofficial networks are the ones determining how team members get along and how central their role is in information transmittal. (Lehtonen, 2004, 270)

Corporate communication joins the organization members together in order to achieve common objectives (Wiio, 2009, 115). Communication is the most important factor in organization functions, without communication there is no production. Communication channels are very essential in corporate communication. Communication is a tool, or user interface between systems. The success of corporate communication depends on several issues: the quality, structure and size of the whole communication system, quality of the information exchange in the system, content of messages, timing, limitations of the situation and communication channels and procedures. (Wiio, 2009, 117-118)

Email is one of most common communication channels in organization communication. Wiio (2009) points out the change in communication balance time-wise: the loading is usually heavier on the respondent. In face-to-face discussion both parties usually invest the same time and effort into the conversation, but an email with few sentences most of the times requires longer and more in-depth reply. (Wiio, 2009, 66-67)

A lot of information in the high technology business sphere is exchanged via electronic media: emails guided and pre-defined web-based programs or integrated enterprise resource planning programs. This also provides data protection when working with subcontractors. This thesis does not include order-demand order confirmation channels.

### 2.2 Corporate communication and projects

Communication and project performance correlate with each other (Harshman and Harshman 1999). The bigger and more complex the project is, the bigger the impact of efficient communication.

Corporate communication has been defined by Van Riel as "an instrument of management by means of which all consciously used forms of internal and external communication are harmonized as effectively and efficiently as possible". It is targeting to create "a favorable basis for relationships with groups upon which the company is dependent". (Cornelissen, 2011, 5)

Corporate communication as a term includes e.g. business communication, organizational communication, management communication and public relations (Väänänen, 2010, 22). Cooperation with R&D department and marketing is required in high technology sector. It has been indicated that integration has a significant effect on the success or failure of new product development in projects and on company level as well. (Viardot, 2004, 27)

A company uses its resources to produce some product or service, in other words value. This has been formed into a theory called input-output – analysis which describes company's business mechanism. Figure 8 shows this value chain in basics. The bottom level demonstrates the simplified



value chain, the top level the operational environment. The centre part of leadership and management works as glue to unify internal and external elements together. (Kamensky, 2010, 43) Communication strategy needs to include and support all these interfaces and networks of the mechanism.

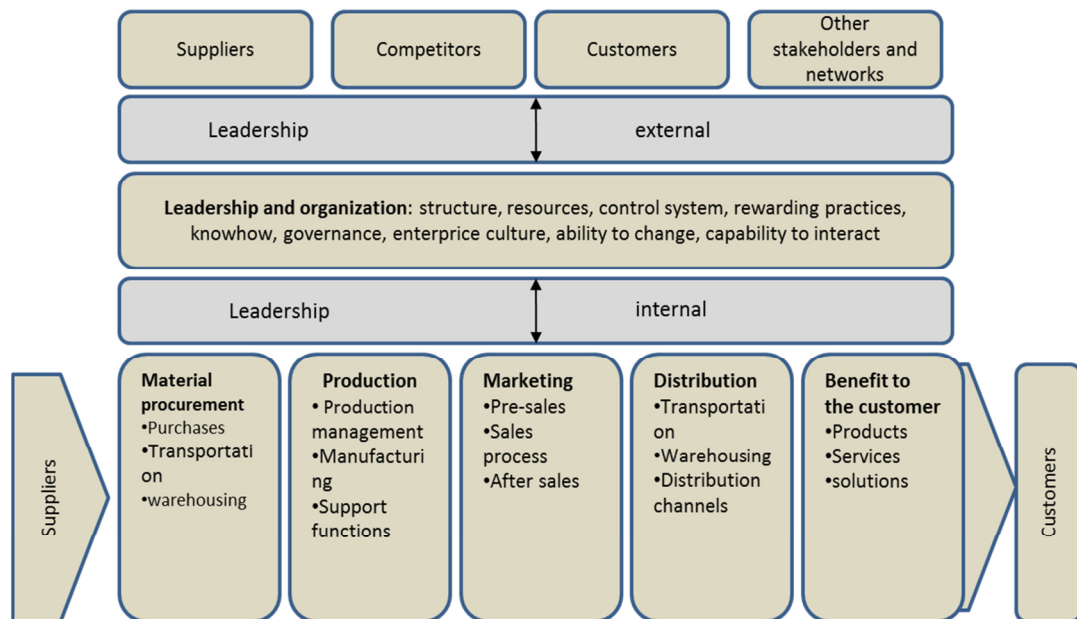


Figure 8 A company’s business mechanism by Porter (Kamensky: 2010)

The target for an individual in the company is to have the right interaction relations and that they operate correctly. Analyzing these interactions require multi-angular view of the company’s customers, suppliers, competitors, networks and of course the company internal interactions.

Corporation communication has changed in the recent years. Nowadays the work is in more complex organization structures: cross-function teams or “virtual” teams that span traditional department boundaries. We may report to a bunch of different groups in matrix organization. Most position demand us to communicate with different stakeholders such as customers, contractors, alliance partners, joint venture partners etc. In addition communication has become more complex; some might even say there is communication overload (volume & complexity). Emails and messages are pouring in and at the same time they we are handling more challenging issues. Attention is harder to get. (Boone, 2000, 8-10)

Project communication is communicating project targets, results and applying the results into practice, project team members and near-by people commitment to the project, building team spirit, clarifying the project scope and target in all phases and receiving feedback and utilizing it during all project phases. Project communication is not just some small detail area of a project, it is various different interaction situation during every single moment within project. (Juholin, 2008, 260)

Especially working in projects creates a whole new set of challenges for corporate communication. Projects need to develop via iteration rounds in

order to provide what is requested as an end result, but among these short sprints the company needs to focus on long term improvements and learning as a company. Projects often function as individual teams, and feel that any other function not directly involved in aiding the project are extra burden. Still the experiences in other similar projects (lessons learned) should be taken into consideration as there is valuable concrete empiric information to be shared. Also the progress of projects should be well communicated to the management and other departments in order to create transparency in the company.

There are many definitions to what communication actions are and should be. Basic function of everyday life is all the change of information and discussion that is needed to perform daily activities. This kind of communication supports and enables the normal functions in a company and thus can be considered as one of the most important form of communication. Personnel commitment and dedication are considered in many companies objectives of communication. The idea is that when the employee is aware of the status of the community and future prospects they are more motivated in their work. Also good orientation period to the targets, way of working, routines and people together with the atmosphere where there is possibility to ask, to put in question and develop the ways of the community are actions of building commitment among the personnel. (Juholin, 2001, 30-31)

On the contrary to common beliefs there is only small correlation between satisfaction to corporate communication and job satisfaction. A person can be satisfied with his/her job but not with the communication, or vice versa. The person's role in the company affect the attitudes: management level usually perceives difference in these two, but operational level combines them. (Wiio, 2009, 120)

One task of communication is informing. That is handing out all the information that is needed in running and managing the organization. The nature of this information is neutral. Informing is an umbrella to internal and external newswlike information with intention to share topical updates and important information. In terminology there is difference between the terms information and knowledge. Knowledge is organized and/or justified information whereas information can be any kind of information with no substance. (Juholin, 2001, 32)

Communication is also a tool for profiling, (or identity/reputation/brand image building) which is the actions done to develop a certain image or reputation of the company. The company image is built in more ways than marketing and publicity. The image builds up by the mere existence of the company: all visual material, audio or other sensory perceived things like way of talking, dressing etc. (Juholin, 2001, 32)

### 2.2.1 Organizational culture

There are several definitions for organization culture in literature. Hofstede (1992) defines culture as human mind learned programming which separates groups of human from each other's. Culture is learned, not inherited. Organization culture therefore, defined by Hofstede (1992) is collective programming of minds. This programming separates organizations from other organizations. Organization culture can be an entity which is more than the parts equal to. It reflects the organization history and social structures of people who have created the culture and maintain it. (Hofstede, 1992, 257-258)

Organizational culture affects highly on the corporate communication: it affects how openly employees express their opinions, what is the nature of hall-way conversations, how are templates and reports filled etc. In other words it affects the general attitude and ways of working in the company. Culture is significant for how companies and organizations function: from strategic change, to everyday leadership and how managers and employees relate to and interact with customers as well as how to knowledge is created, shared, maintained and utilized (Alvesson, 2002, 2).

Understanding the current state of organization culture and why it exists is important for understanding which direction the culture can evolve. Corporate cultures resemble a living tree. There is a core that is has its roots in the ground. Each year, the tree grows by adding layers and mass around the core. A corporate culture can grow the same way. There is a general core that establishes the culture defining the nature of game. Each year, the company will grow or there is some attrition. This change leads to a new group that will slowly be wrapped around the core and brought into the culture. To truly analyze and observe the culture, you must find the core. (Juholin, 2001, 68)

### 2.2.2 Intercultural communication

In high technology companies project teams are more and more multi-located, multicultural and also other ways rich in diversity. This causes some challenges for project communication as messages in projects need to be clear, precise and accurate.

In the commercial and technical environment nowadays business between all kinds of cultures and nationalities are in my opinion forced. For example Nokia has offices and manufacturing in many countries and cooperation between them needs to be seamless. The subcontractors are working in a hectic environment where efficiency, proactivity and punctual schedule is must and customer the king. Communication and cooperation are forced between these different cultures in order to create successful business and it causes sometime collisions in cultures. In harsh business environment cultural aspects are not considered when creating processes and ways of working. For example the power-distance is large in China: inequalities are expected and desired (Lewis: 2006, 490).

Nancy Adler has stated that most of culture collisions happen not due to lack of knowledge of other cultures but lack of knowledge of one's own culture that causes unawareness of your own assumptions which are culture-bound (Tuomola, 2009). The background with culture related problems are always linked to intercommunication between people and hidden values and norms might not be considered when working in hectic, demanding environment. In business people have adopted different ways of working and some have very strong attitudes towards other cultures, collisions are inevitable.

The next chapter presents customer relationship management in project oriented company, but the view is limited to companies working either in business-to-business sector or as subcontractor.

### 2.2.3 Customer Relationship Management in projects

Communication from the program driven company to external environment should be planned and be strategically aligned, especially in subcontracting companies (for companies targeting consumer markets contacts to end-users are normally limited). Every single person in the organization is taking part in the communication and thus also in the marketing efforts. Customer retention is easiest when current and past projects can be shown as reference of good cooperation and performance.

One of the most important business drivers and advantage in new business acquisition in project-oriented company are the company performance and customer satisfaction. Performance and capability affect heavily to the manufacturing volumes as most projects are accessed only via competition. Subcontracting volume-splits can already be changed during the product development phase based on the evaluated performance.

There are four distinct characteristics of high technology products that companies in this sector are affected by: 1) the tendency to worry customers (communication needs to educate consumers of the new technology and its effects e.g. safety and make them comfortable with it), 2) the need for efficient time management (short product life cycle creates marketing time limits, 3) the direct cooperation with the R&D department and 4) the ever-changing conditions of the markets. (Viardot, 2004, 27)

In the case of a high technology product part in development process and its customer and supplier, the customer has an idea what kind of part is needed. But at an early phase the supplier can influence the needed technology solutions, materials etc. The suppliers are eager to participate because of the possibility to optimise manufacturing and the increased potential to be selected as the main provider.

If the company's business is based on projects, the availability of information is essential. The customer knows what they need and want, but the company executing the projects need to acquire the understanding about the expected result and how to successfully produce it. Efficient

communication strategy ensures the access to vital information and technical knowledge together with experience enable to satisfy and hopefully surpass the customer's expectations.

The term "customer" includes also the expectation of symmetry of information: it is expected that the customer knows as much about the product or service as the seller and the needed information to form a rational decision is available. In reality this is not always the case: there is asymmetry of information. (Lehtonen, 2004, 150)

The customers do not just buy the goods or services. They buy the benefits and services provided with them. They buy the goods, services, information, personal attention and other components that ball around the mere product. It is the customer-perceived service of an offering that creates value for them. (Grönroos, 2007,4)

Some of the high technology companies that operate with subcontracting strategy have low-profile external marketing plans. They focus more on customer relationships and operational performance along with their different strategies for sales force. Marketing communication strategy is thus knitted between the relationships and communication of the current running projects.

In business to business selling it is important to notice that nowhere has an organization ever bought anything. It is always a human making the purchasing decisions. Whether that person is making the decisions of his/her own need or for the benefit of his/her organization, merely creates the surroundings and environment for the actions. (Rope, 1998, 10)

Relationship marketing has several different definitions that can be found in different resources (Egan, 2004, 19). There are also several sub-areas that can be seen as parts of relationship marketing. In project management relationship marketing is especially important as building trust and preferred partnerships contribute to the company's success a great deal. Grönroos (2007) has formulated a usable definition for relationship marketing paradigm: "The purpose of marketing is to establish, maintain, enhance and commercialize customer relationships (often, but not necessarily always, long term relationships) so that the objectives of the parties involved are met. This is done by mutual exchange and fulfillment of promises." (Payne, 1998, 4).

Grönroos' (2007) definition is giving room for different branches of relationship marketing whereas still accepting that the different concepts share the same goal of enhancing customer relationships where it is mutually beneficial. In a long term relationship both parties also share the benefit-fruits of the relationship that has developed into a level where they can forecast each other's activities and trust the partner to operate in a manner that will keep the relationship-bridge solid. In a good relationship the buyer shares plans and expectations with the vendor to improve the vendor's possibilities to better forecast the buyer's intentions thus

nurturing the relationship beyond its simple dollar value (Payne, 1998, 27).

Gummesson extends the relationship marketing concept beyond the supplier customer horizon to a network of relationships that are all part of the company's marketing activities. "Relationship marketing is marketing based on interaction within networks of relationships". (Gummesson, 2006, 3)

Grönroos (2001, 244) presents the idea of promise concept as part of relationship marketing. Keeping promises made by marketing activities (such as technology presentations or project quotations) and other ways is important mean in achieving customer satisfaction, retention of customer base and long term profitability. Marketing is an integral part of producing and delivering services to customers and promises (implicit or explicit) are made in the duration of the customer interface. The employee is not always a professional in marketing but working as part-time marketer where facing the customer should learn market-orientated mindset.

### 2.2.4 Communication and Knowledge management

"Knowledge Management is the process through which organizations generate value from their intellectual and knowledge-based assets" is the definition of knowledge management by CIO after saying that there is no universal definition of knowledge management. (CIO, 2012)

Knowledge management is extremely important to companies that operate in project-oriented way. Projects are dependent on accurate and on-time time knowledge transfer and the company can learn through knowledge sharing among projects. Projects are also highly dependent on competent project managers and the companies dependent on the PMs to share their knowledge of the customer and their way to working.

The importance of knowledge management and communication are emphasized in networks where action and activity coordination are key to keep needed data available. Systematic knowledge control or management helps to improve efficiency since the organizations know what kind on data is needed and where it can be received. The data may be in written format, as tacit information (silent information of employees), stored in IT-programs or within the depths of organization culture or individual competencies. (Apilo et al, 2008, 28)

In project-based organization often the top three organizational objectives in knowledge management are: decentralized management from top management to project managers, transfer of knowledge between projects and project-based organizations, emphasis on goal orientation and personal development. Project require co-ordination between different projects, which in total reflect and represent the primary mechanism for production, organization, coordination and integrating all the key business function in the organization. (Ngoasong & Manfredi, 2007)

There are different ways how companies can try managing their knowledge assets:

1. Human resource management - "knowledge is in the minds of people"
2. Document management - "knowledge is in documents"
3. Information system management - "knowledge management is information management with the word information changed to knowledge"
4. Knowledge engineering - "knowledge is something which can be captured in computer applications" (Anttila, 2002)

A company's intangible assets consist of data, information, knowledge and know-how. Information is data, in other words long queue of signs that the receiver can understand and in case it is meaningful to him/her. Information turns to knowledge after its affect. Knowledge includes both the information and the affect and it becomes humane knowledge. The next level is know-how when you are able to utilize the knowledge/information to solve a problem or to complete a task. The term information capital includes all these processes: from data to information and from information to knowledge and know-how. Organizations competences within a company bring both tangible and intangible capital thus creating the company's substance. (Stähle & Grönroos, 1999, 48)

In project-oriented companies project competence and knowledge can be combined from 4 different factors:

1. *Professional knowledge* is usually the basis for one's recruitment in project. It consists of professional theoretic background and reading, knowledge of professional methods and practical experience in work and professional ethics.
2. *Self-guidance* or the personal skills define the ideological and value based compatibility to project objectives. They also affect the ability to take responsibility over one's own work area and the project overall success.
3. *Communicative knowledge* includes the ability for co-operation and interaction and the cross-boundary, versatile contextual competence. Each person needs to possess the courage and skills to express himself/herself in a group and also be prepared to hear other people's opinions. Projects are based on co-operation and synergy, thus reasonable ability to get along with other people is prerequisite.
4. *Strategic competence* includes the understanding of surrounding environment, project objectives and projects as a way of working. Project environment varies from company to company and sometimes they have to find their own space in the organization jungle. This includes networking with other departments and finding ways to navigate to find best ways of working in an ever-changing environment. Each person in the project must find their way of bringing their best qualities for contribution to the project synergy. (Jalava & Virtanen, 2000, 83-85)

According to Choo (2000) there are three kind of knowledge within an organization. There is tacit knowledge, which is silent type of information

of people and groups based on know-how and experience. There is explicit knowledge based on the organizations rules, routines and practices, and there is cultural knowledge which is being expressed in the organization members' assumptions, beliefs and norms in evaluating value or relevance of new information. It is good to keep in mind that knowledge is not just an object or artifact, but also the outcome of people working together, sharing experiences, and constructing meaning out of what they do.

Knowledge and competence are a central resource and source of competitive advantage. In order to improve competitiveness companies and networks need to be able to combine their resources and skills to create unique and valuable resource- or competence-combinations that are not easily imitated. Strategic communication and integrative knowledge management is the link between networks. The networks are in competition not just stand-alone companies. (Apilo et al, 2008, 28)

Intellectual capital can be divided into individual and structural capital. Individual capital consists of employees, network partners and customers with their individual knowledge, behavior and networks of relationships. Structural capital is part of company culture that can be retrieved and used by a newly appointed employee. It is embedded in the corporate culture and thus transferrable to new people, employees, network partners and customers alike. Individual capital is destroyed when a person leaves a firm, whereas the structural capital stays and can be utilized in the future. (Grönroos, 2007, 76)

Grönroos (2007) defines intellectual capital as all the assets of a firm except those in the balance sheet, or the total value of a firm minus its book value. A company needs knowledgeable, skillful, motivated people committed to good service to perform well. Most of the intellectual capital is related to people: management, supervisors and other employees throughout the organization, as well as the network partners and customers in consumer as well as in business-to-business markets. The issue is to recognize the long-term importance of intellectual capital for the generation of financial capital, and to gradually convert intellectual capital into financial capital.

Nowadays the biggest challenge of knowledge management is creating the right circumstances for as much tacit information as possible to be transformed into explicit knowledge and to actions (by the organization and people). (Anttila, 2002)

The next chapter describes implications of communication in fine-tuned precision weapon in high technology companies called project. Managing information, building trust and working together are among tools of gaining competitive advantage.



### 2.3 Special features of project communication

Special features of project communication derive directly from the definition of a project: The PMI Body of Knowledge defines a *project* as a “*temporary endeavor undertaken to create a unique product or service*” (PMI, 2000). A project has a beginning and an end: the communication is bound to be different at different phases of the project. The purpose is to improve and iterate every time, and communication should follow the development as well. At the beginning of the project the team will meet and agree the ground rules of communication and project management in general.

A project is established in order to create something, thus the project faces continuous development and the organization learns something new in the process. Each project is different by scope and project team. Experience working in project oriented way helps somewhat to ease the learning curve, but adopting to new projects still is a new learning experience. The team faces continuously duality aspect of projects: executing the long term vision needs to be taken care of while attending to acute issues. (Jalava & Virtanen, 2000, 47)

Project oriented way of working is a very challenging, turbulent and fast-paced environment. Managing a project requires understanding of complex reciprocal actions. An example of this is the relations of networks among project team members. The same applies for managing the project: in order to understand part features, qualities and complexes, one must see their different aspects of their relations. (Jalava & Virtanen, 2000, 13)

In high technology sector the project environment is agile. According to Chin (2003) three factors describe the environment. First is that the environment is filled with internal and external uncertainty. Internal uncertainty can be such as technical obstacles, project plan changes that affect the project schedules, scope or resources. External uncertainty comes from factor the project team has no control over. These can be changes in the customer requirements, competitive moves or business strategy changes. (Chin 2003, 4-8)

Unique expertise is the second factor affecting agile projects. This is the pool of different specialised professionals that contribute to the project providing a large service of different expertise at disposal. Speed, which is the third element, increases pressure of moving faster and therefore adds uncertainty. In practice plans and decisions are made with less and less information, or interrelation. The Project Manager needs to be aware of the situation all the time and be able to understand the business dynamics, drivers and project management infrastructure. Nurturing a supportive environment at the same time wouldn't hurt. (Chin, 2003,8-11)

The requirement for grasping big entities is even bigger when the company needs to consider strategic choices for different areas of the project, for example HTC selecting their supplier-partners for manufacturing, software development etc. The used term for this is

orchestration which means even wider actions in the global business sphere than the primary supplier's network management. The orchestrator need to evaluate part by part, module by module, technology by technology and market area by market area which co-operating partners or partnership networks to select and find suitable ways of working with them. (Apilo et al, 2008, 20-21)

When working in projects the persons are usually torn in two directions, especially in matrix organizations. On the other hands they feel obligation towards their administrative organization, on the other hand they are asked to co-operate with project team and solve problems that affect everyone. the strength of cross-functional team arises from the ability to utilize large knowledge and competence pool that exceeds division boundaries. Problems may rise in case there are conflicts of loyalty between project team and organization. (Jalava & Virtanen, 2000, 55)

It is said that bureaucracy is based on mistrust. Projects on the other hand cannot function without mutual trust. Trust reduces complexity and uncertainty by enabling dismissal of certain unpleasant behavioral possibilities and enhancing the image of positive reaction and action from the other party. (Jalava & Virtanen, 2000, 57)

Project Managers task in communication is to integrate: he/she needs to integrate organizational structure, leadership processes, information systems, knowledge and operational processes and to combine rewarding and evaluation into operational entity (Jalava & Virtanen, 2000, 24). The integration task requires enhancing communication between different parties, managing interactions and motivating the team to work together. All in all the Project Manager's job is getting everyone involved committed to common ways of working towards the project goal.

How the project organization is build, affects heavily on how the communication can be managed. Common forms of organization are "pure" project organizations where all functions are under the same roof, virtual organizations that are geographically decentralized and matrix organizations where projects are formed from recruiting personnel from core organizations. (Jalava & Virtanen, 2000, 11)

Projects communication environment is multinational, multicultural, multi-project and multi-technical (Väänänen, 2010). The challenge of creating a template for communication is that all people have different habits, knowledge-background, expectations and ways of working that are far too varied in order to be squeezed into one mould. The challenge of creating a template for project communication is the inevitable changes in project schedule, project team members and the project set-up.

2.3.1 Project stakeholders

Running a small project with co-located team is quite different in means of communication compared to a large project that brings together dozens of people from many departments, various locations from all over the globe. These large projects must have a highly structure, organized and complete plan with infrastructure from communication to coordinate the teams' efforts, resolve problems and hit target delivery dates. (Managing Projects Large and Small, 2004, 57)

The key in networking is the ability to create long-term partnerships that can function and communicate interactively. Communication should be open, prolific and meaningful in the attempt to create something more than the two companies by themselves can deliver. Selecting these partners is also important as they have an effect on the company brand image. A responsible company is sure of its subcontracting and supply networks quality in actions and ethics. (Kuvaja & Malmelin, 2008, 121)

Figure 9 demonstrates the internal communication aspect of a project in an environment where there is customer in long-term partnership, and also the company's subcontractors are all committed to developing the mutually beneficial co-operation. In this type of environment project outside stakeholders are for example company management, other departments and end users of the product or service.

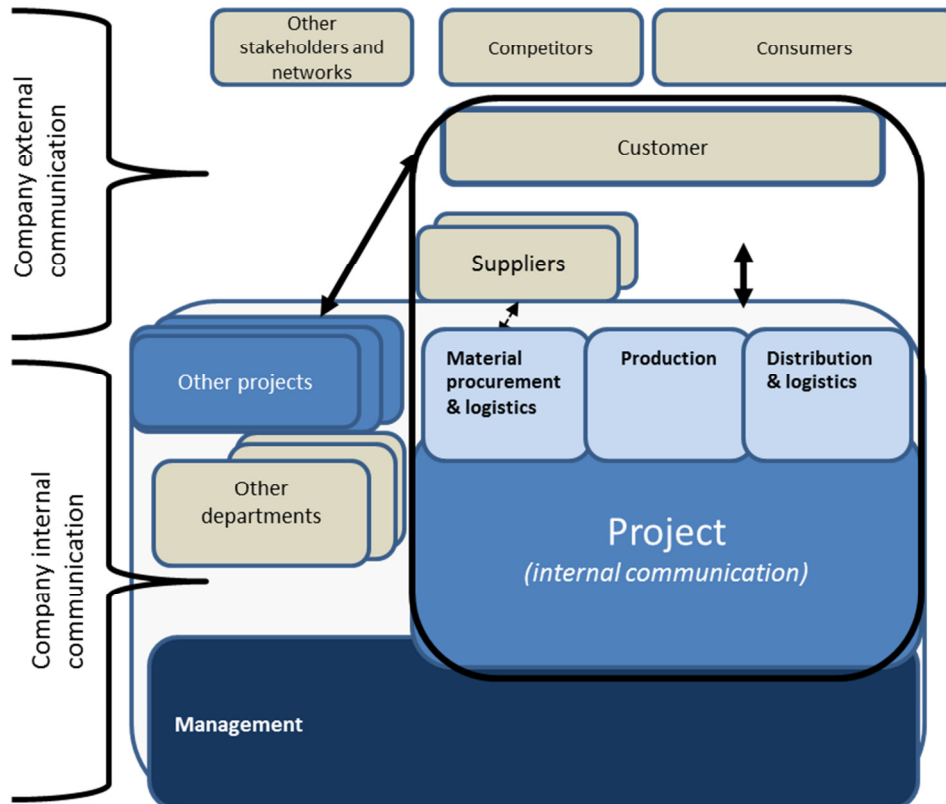


Figure 9 Subcontracting project communication stakeholders

The typical stakeholders in a project are customers, company management representatives, suppliers, project team and others working for the project. Customer can be primary producer in case of subcontracting company, or customers can be consumers, end-users or other departments within the company. Or some cases there can be multiple end-customers. The view presented in figure 9 is demonstrating project stakeholder in a subcontracting manufacturing company. The project internal stakeholders include suppliers and customers also even though they are external from the company view in general.

Projects do not usually fail at the end phase, failure happens in the beginning at the planning and start-up -phase. This is said to be due to project team members attitudes: they overestimate their abilities and underestimate the risks. Project risk management should concentrate on two major phases, the strategy planning and execution planning. (Jalava & Virtanen, 200, 11)

Subcontractors and networks are highly important for high technology company because of the added competences, volumes, knowledge and network competitiveness. Communication with suppliers and networks requires special stakeholder attention and management. The next chapter will discuss the effects of subcontracting and partnership network communication.

### 2.3.2 Subcontracting, networks and communication

Managing a high-technology product development project is challenging itself and the challenges only increase when there are more companies involved. The speed of changes in these kinds of projects calls for special agility and change-management competencies. When adding networks of subcontractor, partners, and material suppliers etc. the basket of competencies grows to include network management skills, systematic approach, strict agreed set of rules and IT infrastructure. (Apilo et al, 2008, 13)

Outsourcing is purchasing something a company needs from outside the company instead of doing or manufacturing itself. The product can be something concrete or intangible, or outsourcing can also mean purchasing finished products for sale as part of deliveries. The purchase of semi-finished products in production is traditionally defined as subcontracting. Lately the term production partnering has become fashionable. It means that the subcontracting relationships are developed to be more long-term solutions and mutually beneficial instead of single sales. (Pajarinen, 2001, 6)

The main reasons for utilizing subcontractors in projects are shortages of skilled labor, maximizing profit, reducing overhead costs, and reducing the work pressure on own personnel. Both the short-term (project) and long-term relationship with the general contractors are essential to the success of all specialty contractors. Communication among project parties

is critical to the project success. The higher the number of subcontracting layers, the higher the risk of communication mishaps. The most communication problems are due to delay in communication to all the layers and the possibility of communication errors in information transfer. Also the use of different languages (for example English and Chinese) can cause interpretation errors and contribute to miscommunication. (Tam, Shenb & et al, 2010)

Companies facing short product life-cycles, delivery times and product variety are more likely to seek networking possibilities. In this type of environment difficulty to forecast demand and future development are typical. Hence, the role of information and its use is pivotal. Companies can obtain more varied information about technologies, requirements and predict the future development of the markets through networks and alliances with other companies. (Ali-Yrkkö, 2001, 12)

A supplier can create competitive advantage by for example creating excellent delivery reliability, participating in customer's product development, functioning with partnership model, technological expertise, excellent quality or refined service concepts. (Vesalainen, 2010, 59)

Besides mere subcontracting, inter-firm alliances are common when corporate strategies strive for strengthening core competencies and thus outsourcing other activities. These alliances can be formed "horizontally" between competitors, "diagonal" between companies in different industries and "vertical" alliances between buyers and suppliers. The natures of the alliances have become deeper. Co-operation includes not only marketing or manufacturing operation, but also research and development activities, product design that deal with highly confidential (strategic) information. (Ali-Yrkkö, 2001, 12)

There are different forms of co-operation in research and development activities. For example some design work can be a one-time transaction whereas network or strategic alliances focuses its strengths for a mutual project that can last the project or until further notice. Attachment 1 describes the different forms of co-operation and their relation to learning along the due of the co-operation. (Apilo et al, 2008, 16)

Vesalainen (2010) found in his study of subcontractors competitiveness factors that companies define resources as flexible supply network, trust, good atmosphere, low cost –resources (factories or supply networks in low cost countries), automated machinery, modern equipment and special multifunctional machines. Knowledge on the other hand in the same study was defined to include ability to coordinate supply chain, knowledge in customer operations, competence in purchasing, ability to build trust, knowledge of customer products and special technical skills. (Vesalainen, 2010, 104)

In pursuit of new product development partners or looking for long term customers as subcontractor, it is good to keep in mind that companies usually select their preferred partners from those that have similar targets

for co-operation and suitable communication practices. The worst pitfalls in communication can be avoided by forming clear common ground rules and practices. Apilo et al (2008) claim as best practice to communicate facts with formal procedures and guesses, feelings and hunches with informal discussions, both at very early phase. (Apilo et al. 2008, 14)

Supplier network is an entity of stakeholders and managing it is one of most challenging tasks global companies face. Consumers, investors and certifiers expect companies to evaluate and select their partnerships with high ethical standards and to follow the human rights, working conditions and environmental effects also in countries where legislation does not oblige it. Some means as a customer to develop and maintain the subcontractors responsible actions can include:

- committing to international norms
- developing ethical codes of practice considering different countries special issues
- inspection visit and correcting noticed defects
- co-operation with national organizations to improve local circumstances
- utilizing standards and certificates
- memberships in standard-developing instances. (Kuvaja & Malmelin, 2008, 71-72)

The electronic industry is an example of a business sphere where outsourcing, networking and partnering are advanced. The driving force towards outsourcing is the need to separate the life cycles of the product and the manufacturing technology from each other. The life cycle in information technology products is very short and the pressure is to reduce it even further. Also the prices of the end products are coming down all the time. The stakes of the product owner are in marketing and R&D which creates a need for solid reliable long-term subcontracting networks and partners. (Pajarinen, 2001, 43)

Vesalainen (2010) wrote in his study of subcontractors competitiveness factors that companies in light industry value especially high fast ability to react and flexibility and emphasise the systematically the meaning of all technological competences as competitive factor. However operation management and supervisor work are considered of less importance. Medium industry companies seem to appreciate also the knowledge of raw material and component markets as well as good production control. More than in other industries they value continuous development as mode of operation and customer oriented organization. Heavy or large-scale industries are more focused on economic-related issues like low cost network and co-located premises globally. (Vesalainen, 2010, 68-70)

A company that works in subcontracting must be willing to adapt to new situations and change their strategy according to the messages from environment. According to a research by Vesalainen (2010) companies value the ability to react quickly and flexibility most over other factors. Other factors that could bring competitive advantage to a subcontractor are trustworthiness and commitment, employee motivation and their

commitment and good understanding of customers operations. The respondents valued least the knowledge of ICT-technology, modern design-HW or large territorial networks. (Vesalainen, 2010, 65)

Subcontracting relations vary from deep partnerships to thin market and competition driven relations. Market relations the focus is short term and on performance. In partnership type of relation, the focus is more long term and usually the cost structure is viewed as whole. As the competition is fierce in most businesses the tendency to seek more short term solution at a lower cost has driven to more market driven relations. Some large companies on the other hand have initiated supplier development programs where they have selected few applicable suppliers. Competent suppliers get to the supplier base of these global giant companies. The market mechanism is still effective within these networks; the companies need to demonstrate good quality, cost effectiveness and continuous development. (Vesalainen, 2010, 50)

Charan (2009) emphasizes the meaning of building information bridges with suppliers, customers and the company aiming to ensure that the suppliers see the same reality as the company by sharing information about things like the need to cut costs or substitute materials as prices change. Suppliers need to be more than subcontractors, they need to be collaborators. The company also needs to be aware of what margin they consider necessary for survival, their cost control efforts and how they intend to manage for cash, in other words how to keep the partnership ongoing keeping both parties healthy. Good information sharing with the triangle, customer –company –supplier, will help to minimize cash in inventories both incoming and outgoing. (Charan, 2009, 93-95)

Noorderhaven et al (2002) define (via several sources) the meaning of network embeddedness to relate to the quality of relationships between organizations. Inter-organizational relationships are said to be embedded if a social dimension exists that influences the economic behavior of the partners. "Being embedded in a network of inter-organizational relationships provides an organization improved opportunities for learning, as well as access to technologies and resources, and increased legitimacy, and hence helps the organization to enhance its competitive position." (Noorderhaven, 2002, 7).

The next chapter focuses on representing communication strategy structure and planning phase. The emphasis is on company management level. The implications and adaptation to project environment is described in conclusions.

### 3 COMMUNICATION STRATEGY

Communication integration (the complexity of communication management) states that the organization messages are to be presented to individuals instead of the “markets” (Juholin, 2009, 25). Communication

can be a competitive advantage if done in a planned, coherent and proactive way. Communication strategy is built to ensure that. It is a strategic approach to all communication within the company. It is the plan how to manage communication. It supports the overall company strategy to achieve its objectives.

Strategic communication means delivering the best message, through the right media, and measured that they do relate directly to the organizational and communication-specific goals. It's the difference between doing communications stuff, and doing the right communications stuff. (Idea.org, 2012)

There is a difference between communicating strategy and communication strategy. Communication of the corporate strategy is targeted to implement the planned strategy within the organization. It is internal communication either to plan or to execute company strategy. Communication strategy on the other hand is the strategy map drawn to organize internal and external communication. It aids to execute the corporate strategy. (Hämäläinen & Maula, 2004, 11)

Communication is planned in many different levels. *Operative* planning is developing actions and arrangements when target groups and their needs and wants for interaction are known. This can be different kinds of occasions, campaigns etc. when planning is on operative level. (Juholin, 2001, 54)

*Strategic* planning is defining what operative actions are aimed at. The focus is in the future and in the long-term changes and results. It is though important to distinguish the difference between the communication strategy and the company strategy. Communication cannot save a company from bankrupt but via means of communication you can share information and increase awareness of the situation and possibilities to influence it. (Juholin, 2001, 54)

*Tactical* planning of communication includes mapping the resources, budgeting, co-operation- and target group analysis, guidelines of actions and rules for crisis communication. It is a way to implement the strategic plan into operative actions. When the span of strategic planning is years, tactical planning focuses on the next year or the next few months. Operative planning glances the next quarter of a year or next weeks. (Juholin, 2001, 55)

Communication strategy builds its core around the choices, definitions and targets that the company interacts with its stakeholders and environment in present and future conditions in order achieve its overall targets and strategy (Juholin, 2001, 79).

Defining the meaning of strategy can seem pointless, but when asking 10 people in an organization to define it, suddenly there are 10 different explanations and implications. Strategy is the direction and scope of an organization over the long term, which achieves advantage in a changing



environment through its configuration of resources and competences with the aim of fulfilling stakeholder expectations (Räsänen, 2010).

The need for changes in strategy arises from the changing environment of the company. Strategy includes both the objectives and the operative guidelines for actions. Controlling the environment means not only adopting to the changes in the environment but also changing and affecting the environment and at basic level, choosing the operational environment. Sometimes the companies do not even notice the change that has already happened, or they notice but do not understand the effect and therefore do not react to change. In the best case the company can foresee the coming changes in advance and utilize the changes or even threats to their benefit. (Kamensky, 2010, 18-19)

Communication strategy should always follow the company level strategy, so if there are changes in the strategy, communication should be reviewed and revised as well. Continuous follow-up of communication can also be a good strategic tool. By following up and evaluating the status of the company communication, the minor clues of environment changes can be sensed earlier.

Communication strategy is defined as the definitions, choices and objectives that are implemented and applied using its communication resources in order for the company to prosper now and in the future. In the strategy the company sets its course aligning its central targets and actions. In order to implement that, different definitions are needed. Communication strategy is a strategic plan for communication. (Juholin, 2009, 69)

Building a communication strategy can be done in many different ways. One way is to make it as a project. A project has a beginning and an end, therefore this type of approach is good for communicating something one-time or campaign-like. The project plan could be built as follows: (Hämäläinen & Maula, 2004, 76-77):

- Current state analysis
- Setting targets and defining the project
- Mapping existing information and material and the needs to produce new ones
- Defining target groups
- Defining channels
- Challenges, issues and how to tackle them
- Resources
- Schedule and milestones
- Roles, responsibilities and mandates
- Execution and its steps
- Expected results and means of evaluation
- Project follow-up and documentation
- Quality assurance

In a project oriented company the project targets should support the achievement of the company targets. The difficulty to create a

communication strategy for projects is the ever-changing nature of the environment. In high technology sector the life-cycle of projects is relatively short and schedules are tight. Despite the constant pressure communication planning should be well-planned and managed.

Juholin (2009) shares the same basic concepts of building a communication strategy, but divides the process into four areas: basic definitions, communication strategy planning, communication plan and follow-up. The end results should reflect the change towards the company objectives.

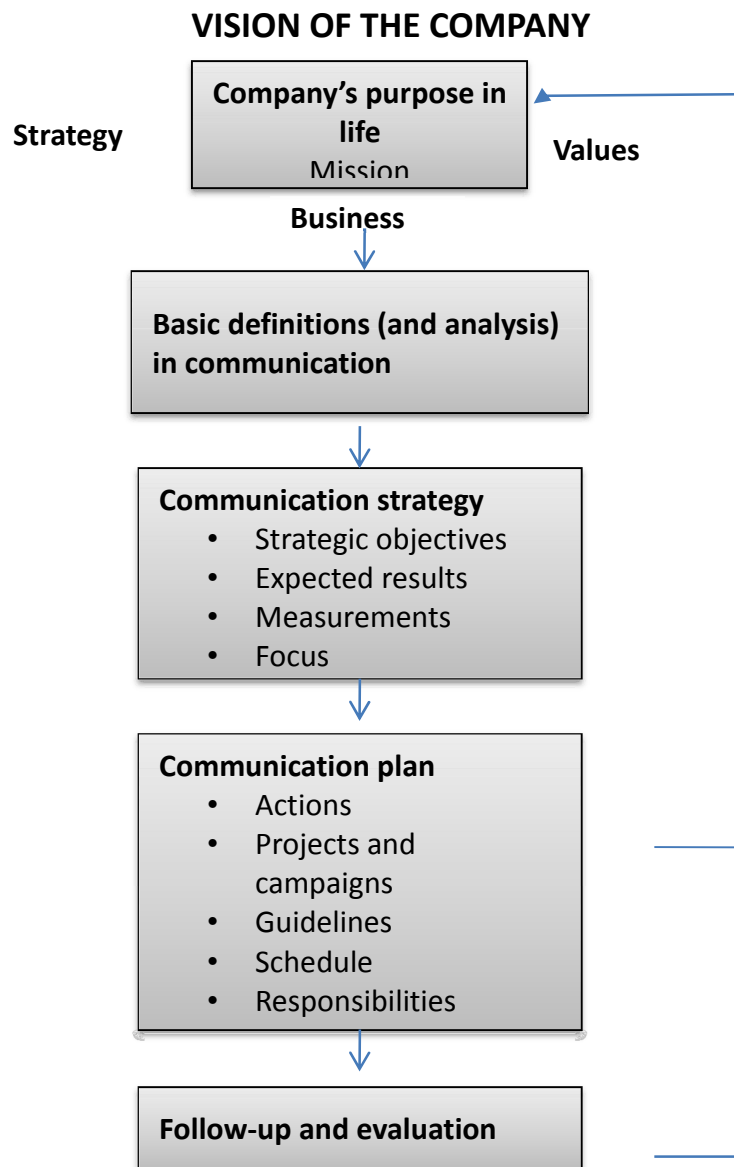


Figure 10 Levels of communication planning (Juholin via Kamensky 74)

Figure 10 illustrates that all the actions of communication reflect the overall targets of the company. The mission needs to penetrate in all the activities of communication so that they become reality everyday work

and interaction. This in return requires that the whole organization is aware of the objectives of communication. When planning how to build the communication, it is good to take the time to define the basic concepts like unwritten agreements, stakeholders, roles and responsibilities. (Juholin, 2009, 74-75)

### 3.1 Basic definitions

Basic definitions are a foundation to build the communication strategy on. One needs to make sure the aspects of communication as well as the organization-bound terms and targets are understood and justified. If the foundation is crooked, the whole house will be like the Leaning Tower of Pisa. Sometimes it is enough that the definitions are left as unwritten rules; some prefer to have them in black and white. (Juholin, 2009, 76)

The basic terminology is never stable. Even the most commonly used terms like business idea, mission, vision, strategic intentions, values and operational principles have different meanings in different contexts. Thus a company should take the time to define and standardize the use of certain terms. (Kamensky 2010, 65)

In project and high technology environment the use of abbreviations (for example PM –project manager, PMO - project management office, PMI - Project Management Institute, BP – Business Planning, PLM – project lifetime management etc.) are very common and widely spread. Sometimes the abbreviations are not even linked to the actual terms in case similar combinations of letters are already in use. Dealing with technology and expertise from several areas, it is a good idea to go through the central abbreviations.

A company's/Project's purpose in life, mission, is an umbrella where to gather all strategic content. Mission is a fixed element even though every once and a while it needs to be questionalised. Mission answers to questions such as: Why does the company exist? What do we aim to achieve in the long run? What are our values? Business concept defines the basics of a company, why does it exist. Values are the principles by which the company operates. Vision is the targeted future state of the company. Mission is the combination of business concept, vision and values. (Kamensky 2001, 66)

The communication of a company arises always from the mission and objectives, but communication can be influenced also from outside by for example regulations. Different countries have different laws of e.g. freedom of speech (the right to express one's opinions, publish and receive information). Companies in the stock markets are bound to the securities market act that regulates communications and prohibits inside dealing. (Juholin, 2009, 69)

Once the role of communication is mapped and some thoughts have been given to it is target, it is good to define some basic tasks of communication

in the organization e.g. what kind of actions and tools are needed to achieve the objectives. The communication objectives should penetrate all the activities. Furthermore some organizations like to list down the principles in communication: the characteristics of the interaction. (Juholin, 2001, 60-61)

The first thing when starting a communication strategy is to outline the objectives: what is it that you want to achieve? Communication cannot work miracles if the company is facing bankrupt but it can help to share information and retain relationships.

### 3.2 Target setting

Setting strategic targets is one of the most important parts of communication planning. However these targets should also be achievable, so that they are more than mere wishes. The company should link target to motivation. (Juholin, 2001, 79)

When creating the targets for communication one must distinguish the overall company operative targets from the communication targets. For example market share increase is not a target for communication even though communication supports that. Typical communication targets are company conspicuousness, well-functional relationships, certain company image or well-functional flow of information. The communication department can set targets to its own operations remembering that communication aspirations derive from company strategy and influence them together with other company operations. (Juholin, 2001, 79-80)

Effects are directed to the company stakeholders or target-groups. Target can for example be that the stakeholders get to know the company better or more diverse and their attitude towards the company becomes more positive.

Due to the fact that access to company communication strategy information is limited, the author will utilize existing literature concerning strategy mapping. Kaplan & Norton have presented a widely popular model of company strategy mapping in form of Balanced Score Card as seen in figure 11. The communication is almost always linked to corporate overall strategy and the strategically choices related to communication are whether the company will focus on operational excellence, customer intimacy or product leadership approach in their operations (Kaplan& Norton, 2009)

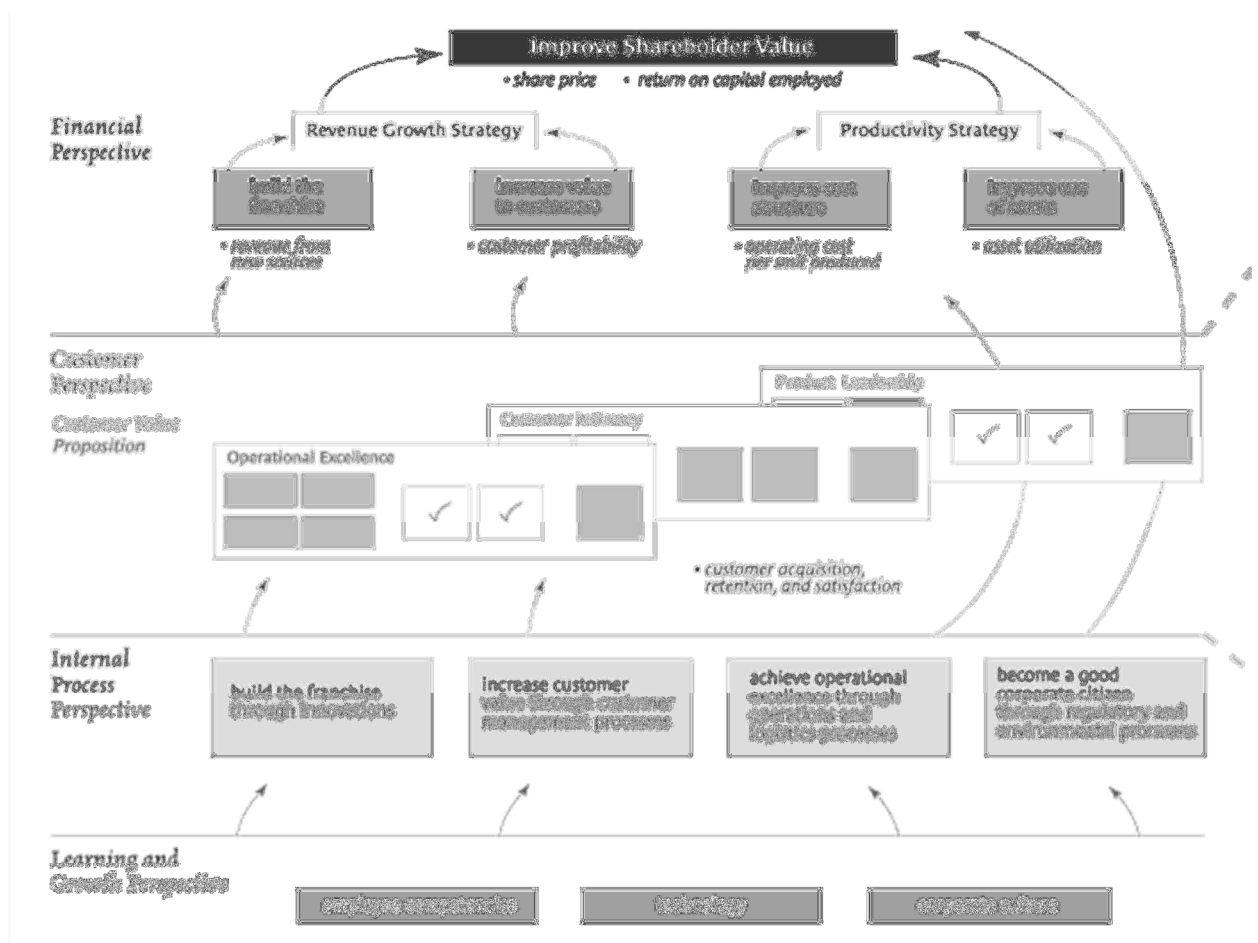


Figure 11 Balances scorecard strategy map (Kaplan & Norton, 2009)

The customer perspective on the Balanced Score Card is meant to define the company value to the customers. Value proposition to customers expresses the context and the circumstances that create the increased value to the customer whether it is via improved operations, customer proximity or superb products. (Kaplan & Norton, 2004, 52) Figure 12 presented below demonstrate the feasible strategy choices that can be used as differentiators.

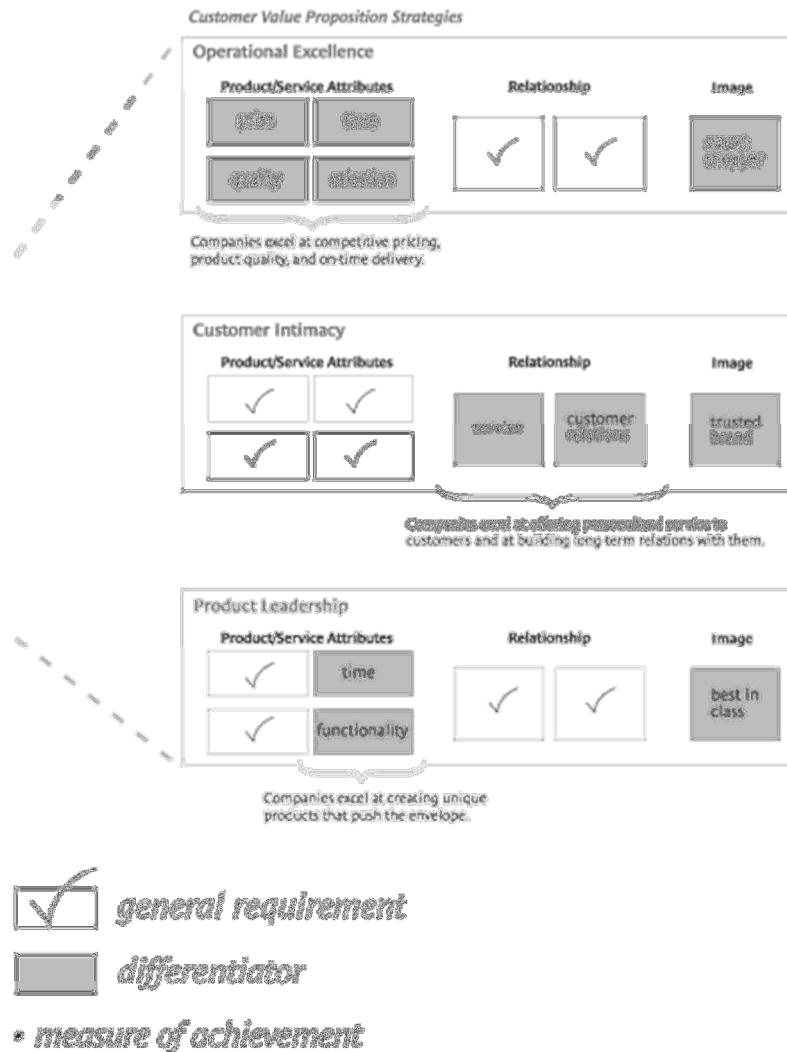


Figure 12 Customer perspective strategic choices (Kaplan & Norton, 2009)

To give an example of a project oriented company and its strategic communication targets, the thesis shortly presents a company called Lite-On Mobile. Lite-On Mobile operates in the high technology sector as subcontractor for telecommunication. It has declared its strategic aims in one of the CEO's interviews in the LATEST ON LITEONMOBILE – newsletter (13.8.2009) in figure 13. The company expresses its intent to care for the customers by adding their value and growing to be their trusted partner. The company's strategy is based on creating long-lasting relationships with customer by offering them good service via trusted brand.

<p><b>Mission:</b></p> <p>We add value by integrating innovative technologies and services for the leading handheld brands</p> <p><b>Vision:</b></p> <p>We will grow to become your number one choice</p> <p><b>Values:</b></p> <p>Think Beyond –</p> <ul style="list-style-type: none"><li>- Tomorrow: show responsibility, respect</li><li>- Abilities: be proud of what you do, become better</li><li>- Boundaries: collaborate, commit to common goals</li><li>- Challenges: find opportunities, make the most of them</li></ul>
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Figure 13 Lite-On Mobile strategic aims

The mission, vision and company strategic target of growth and quality are to penetrate through every aspect in the communication strategy. In Lite-On Mobile's case growth and quality are the themes that need to be visible and active throughout the communication strategy.

Basic definitions also include writing the target(s) for company image: how the company wants to be seen and heard in the eyes of their stakeholders. This definition is linked to the company vision, mission, business idea, strategy and values, because the company image target should represent all those in easily expressed form. The starting point of the definition is the company's purpose in life (mission) and business idea, the plan for the future (vision) and means by which these targets are meant to achieve (strategy). (Juholin, 2001, 62-63)

The basis for a European company and its attitude towards relationship and communication arise from the perception of the company as a coalition meaning like a consortium of different stakeholders and they strive towards reasonable profit instead of maximising net profits. European companies also commonly seek to solve conflicts of interests within the consortium rather than in court or markets. (Kuvaja & Malmelin, 2008, 62)

Juholin (2009) describes that the dimensions of reputation (from Fombrun et al. & Pohjoistanta) derive from the perceptions of the stakeholders. Figure 14 demonstrates these different scopes. Each stakeholder-group values and stresses different factors. For example investors and analytics value financial outcome and management highly, whereas citizen activist-groups demand corporate social responsibility. Consumers hold product quality high in their rank. Reputation is borne from factors that differ, depending on who is doing the evaluation. (Juholin, 2009, 84)

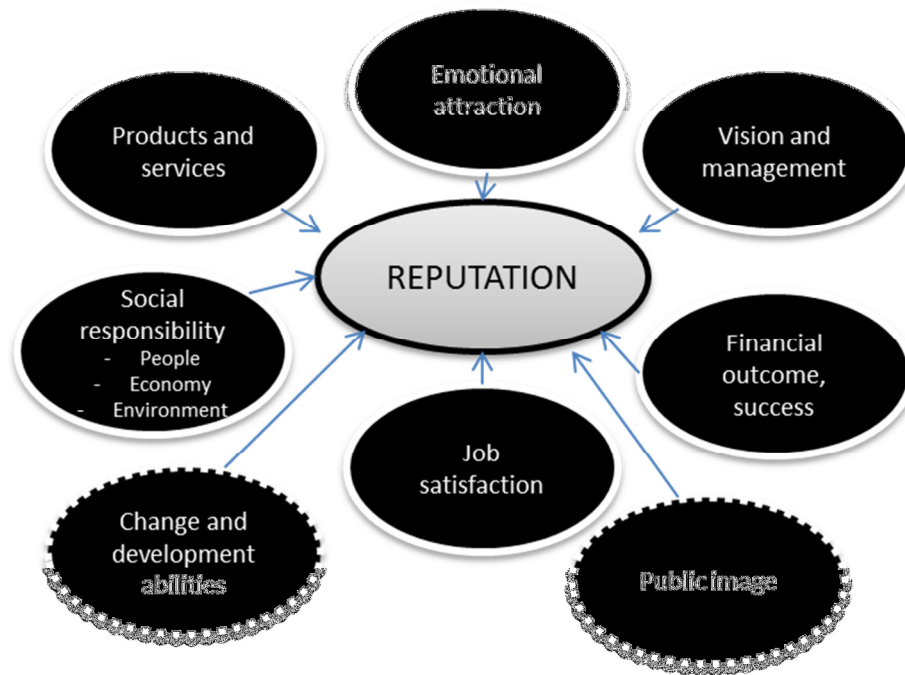


Figure 14 The dimensions of reputation (Juholin, 2009, 84)

### 3.3 Stakeholder analysis

Stakeholders are “key components” for a company: they offer their knowledge, information, money or vision to the use of the company. In return they expect the company to repay their needs for example financially or ethically (for example paying salary/dividend or preserving the nature around them). (Juholin, 2009, 199)

It is not enough for strategic planning to define the company stakeholders, you need to know them. A good way is to describe the different co-operation groups and stakeholders forming TOP-lists of them. The most top of the list are personnel and closest co-operation partners. Other typical stakeholders are customers, owners, financiers, social decision-makers, unions and organizations, group media, schools and universities. Internal counterparties for the stakeholders should also be included in the analysis. (Juholin, 2001, 69-70)

Separating communication stakeholders to internal and external is not meaningful as some groups knowledge and position towards the company can be as important to the existence of the company as its personnel. For example customers can literally hold the future of the company’s in their hands as the contingency for demand of products and services is the prerequisite for company success. (Juholin, 2009, 40)

There are several styles of approach towards stakeholders. Kuvaja & Malemelin (2008) describe the following options:



- Avoidance: to minimize contact with this stakeholder group, because the risks are too big and there are no prerequisites for constructive interaction. Action is to follow up on the stakeholder group.
- Adoption: To listen to the stakeholder group and try to take its expectations into consideration.
- Negotiation: To try to create conversational relations and seek co-understanding in selected themes.
- Influencing: to try to change the attitudes, knowledge or actions of the stakeholders. (Kuvaja & Malmelin, 2008, 65)

There are several stakeholders in the organizations, both internally and externally. In a matrix organization clear and organized communication is the key for effective e working environment creating transparency, co-operation and building interaction between participants. Good internal communication in a fast moving business is also competitive advantage, because the information is then available for communication with customers.

### 3.4 Resources and roles

“Finance is use of resources“ says a classical definition in economics. This means that all people and organizations use resources, thus finance, in their operations having financial consequences. Resources are always limited and usually scarce, so they are better used wisely. Resources have 5 dimensions that have an impact in the end result:

- number of resources
- price of resources
- quality of resources
- allocation of resources
- utilization rate of resources (Kamensky 2010, 42)

Resources in communication are the material and immaterial resources available for managing and implementing communication. Resources can either enable or condition the achievement of goals. In order to asses and decide the resources, one must know the purpose and aim where to drive the communication. Resources can be evaluated from the view of quality and quantity, or in respect to time and objectives, or compare the targeted level to current state and see if they are justified. (Juholin, 2001, 74)

Knowledge itself is a resource. Sometimes this means researches, but can also mean benchmarking your own operations against other well-functional organizations. Knowledge management aims to producing, process and deliver information for the benefit of the company's operations and environment. (Juholin, 2001, 75)

The organization and management of communication is part of defining roles and responsibilities. In the recent years the habit of appointing the Director of communication as part of Executive board has flourished. Thus communication becomes a part of the management, decision-making and real-time information is available throughout the organization. Some

organizations have end up with specialized or decentralized communication models. Networks are also a common way to organize communicating. It is a good way to stimulate interaction and bring the expertise of the networks for the whole organization to utilize. (Juholin, 2001, 73-74)

People work in projects that run overlapped, one upon the other. In some companies more than half of the time can be consumed in different projects. For some employees all their work is project related, and there can be several projects running at the same time. (Juholin, 2008, 257)

The role of Project Manager is versatile functioning in many interfaces. He/she is in the centre of managing simultaneously external relations and internal integration. Figure 15 represents the roles of Project Manager in time dimension. (Jalava & Virtanen, 2000, 35)

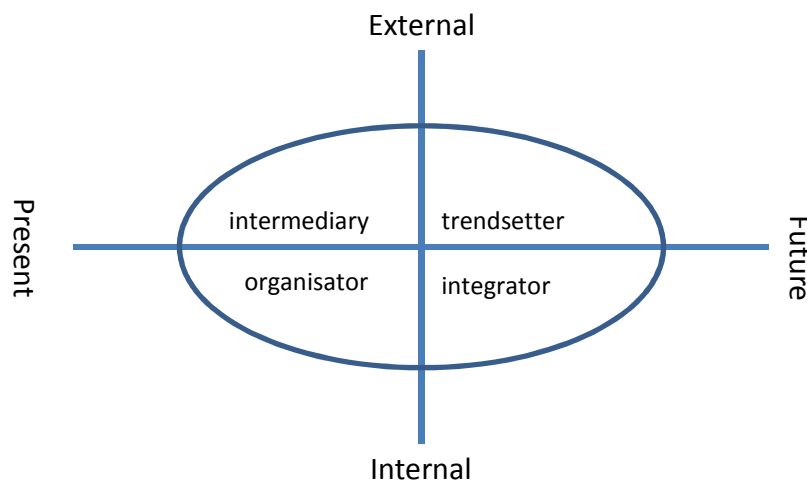


Figure 15 The roles of Project Manager (Jalava & Virtanen, 2000, 35)

As trendsetter the Project Manager keeps the focus in the project vision clarifying and interpreting the meaning by creating plans including detailed and scheduled procedures for execution. As integrator the project manager main task is integrating different internal operations that drive towards project objectives. The project team needs to operate as one unit that has a greater competence than the competence of the individuals calculated together. In the organisator role project manager is responsible for building the organization around the project and managing it so that set objectives are achieved. The role of intermediary includes being the figurehead, information interface and interpreter. (Jalava & Virtanen, 2000, 36)

Project manager has a large role leading project. He/She is expected to coordinate, lead and integrate project team, most of the time without direct superior position. Below are written the responsibilities of Global Program Manager in Lite-On Mobile from LOM recruitment advertisement job description 12/2011:

- Project Planning Management

Being responsible for the global Project Master Plan. Ensuring that the internal and external schedules and process Milestones are synchronized so that the targets set according to Account owner and Customer can be reached. Being responsible for the timely and qualitative synchronization of LOM outputs and Customer requirements.

- Customer Relationship Management

Being the primary interface between LOM and the Customer and communicating proactively and responsively with Customers. Ensuring that customer requirements and needs are fulfilled within contractual guidelines.

- Project Execution Management

GPM is a trigger for planned and ad-hoc project related actions in the global level. GPM actuate global execution to regions by making sure that regions are doing right tasks and issues on right time. Ensuring that the project teams are following the global PC-process principles including milestone reviews and checklist usage.

- Risk Management

Controlling the project related risk management process and steering preventive and corrective actions globally. Ensuring the timely and efficient problem solving. Acts accordingly as the escalation point for local Project related issues and when needed escalates the project specific issues to the Management.

- Information Management

Ensuring the sharing of validated fact-based information both internally and externally across regions. Ensuring that Customers, Suppliers and Perlos Project Team Members have adequate and up-to-date information available. Organizing needed project resources with related resource owners. Setting practices, roles and responsibilities for information distribution and project execution.

- Technology Management

Ensuring adequate attention and action to the global implementation of project-related fundamental technologies. Being responsible to set-up needed resources for project technology implementation with related resource owners.

- Financial Management

Integrating costing information (cost models) from regions to global costing consolidation. Being responsible for global quotation creation (CBD's) according account owner's targets. Program manager is responsible for achieving the agreed project's profitability globally.

### - Project Status Management

GPM is always on the top of global issues and current status of the project. GPM is responsible to organize and lead global follow-up procedure to monitor regional level project execution. Being in charge of regular global project status and progress reporting, for both internal and external purposes. (Lite-On Mobile, 2011)

According to PM literature (e.g. Peter. P. Lewis 1998,14) and some predominant myths of PM project managers are dedicated only to managing the project and have no other duties, they are also expected to utilise systematic information-sources that are based on knowledge-management systems. Reality however is that Project Managers are caught in everyday hectic routines and other tasks that cause stress. Also the communication tools are usually non-systematic and simple such as phone calls, emails, meetings etc. (Jalava & Virtanen, 2000, 10)

## 3.5 Focus-areas

Communication strategic outlines and current state analysis give the starting point to where to focus in communication. The most focus or importance areas can arise from some event in the future or changes in the organization. Typical focus areas in communication are network communication, managerial communication, image building etc. (Juholin, 2009, 106)

In project operations the focus of communication typically is in successful project planning and execution. Communication is a tool to get everyone working together and utilizing their own strengths for the projects benefit.

## 3.6 Communication plan

The scale of the communication plan needs to be discussed within the organization. Planning is molded around the basic principles of the company: the way of thinking guides the communication. The bigger the organization the greater the need for defining a common way of working. (Juholin, 2001, 86)

According to the Project Management Institute (2004) the phases of communication planning are: Communications Planning, Information Distribution, Performance Reporting, and Administrative Closure. The book emphasizes the importance of communication management plan which is the output of communication planning process that includes the environmental factors, organizational process assets, project scope statement and

project management plan. (PMI, 2004) Appendix 4 represents an example of how to conduct a project communication plan.

Operative planning can be divided into the following groups: everyday communication, guidelines, separate projects, campaigns, processes, yearly planning or rolling planning. Everyday communication is the daily flow of information, discussion etc. that make the organization function. It is routine, frequent and everyone are aware of it. Usually everyday communication has guidelines. Projects, processes and campaigns are something that requires special attention. (Juholin, 2001, 87)

Different tools for communication purpose are for example intranet, management briefing, emails, personnel magazine, strategy brochure, development discussions, CEO letter, bulletin board, team workshops etc. (Hämäläinen & Maula, 2004, 74).

Everyday communication should reflect the strategic planning of communication (principle of penetration). There is no general substance what everyday communication is. The topics can either be big or small. The topics can be stripped down via three questions: what do we must do, what should we do and what would we want to do. This way the community gets to discuss what the most fundamental tasks are. (Juholin, 2001, 88)

The rules and used practices of everyday communication should include at least two things: how often and what frequency different topics are considered and by whom. It also needs to be defined what is the responsibility of individuals for seeking out information in the intranet. The guidelines for communication can vary, but they should be useful tools for work. Guidelines can include for example: how to arrange customer events, reception of customer, how to write an email and how to answer the phone using the company standard. (Juholin, 2001, 90-92)

Table 1 Example of communication targets

Channels/ Substance	Management events Internal & external	Department meetings	Superior- subordinant discussion	Intranet	Magazine
Targets and results	4 / year	1/month	1/year (development discussion)	1/month	
Changes			1/year and when needed	Continuousl y "now topical"	
Own work			When needed		
Salary and benefits			At the development discussion	intranet	Set column
Free-time				intranet	
Common discussion				intranet	

Väänänen found in her study (2010) that project communication plan should at least include the following aspects:

- the purposes of the document;
- hoe to find information (e.g. links to intranet and documents management systems)
- how to transmit information i.e. guidelines for most typical or recommended media for project communication, and a communication matrix including the following aspects: what information, when, whose responsibility, how and to whom;
- how to operate in certain situations;
- where to find support about project communication.

### 3.7 Follow-up and evaluation

The company expects results from the performed actions. Expected results can be defined for something to improve, stay as they are or at least not to become worse. The expected results can be defined a percentages or scores depending on what kind of meters are used. If the targets are set by target groups, the expected results should be divided by those groups. (Juholin, 2001, 83)

You can't manage what you don't measure says an old management wisdom (Reh, 2012). To follow-up on communication progress requires at least the following things:

1. The company has set targets for its communication and defined how they are to be evaluated
2. The starting point level is known.
3. The company has defined basic definitions concerning stakeholders, basic messages and most important channels. (Juholin, 2009, 253)

The first question focuses on the operative tasks and can be answered with yes or no. The second question represents the effects of communication

and requires the existence of meters and criteria's. They help to see the progress in more visual way. The third question verifies that the actions done are correct ones. This question is probably the most important one as it reveals if the targets have been properly set and justified serving the company overall objectives. The fourth level evaluates the communications agency and developing the quality of communication. (Juholin, 2009, 254)

The quantitative measures of communication are the tangible outcomes for different stakeholders such as brochures, publications, paid adverts, network solutions, events etc. These are relatively easy to compare to the given targets. But for more complete evaluation of communication more than quantitative criteria are needed. Qualitative aspects are harder to measure, but give more multi-angled view of the status of the company's communication. (Juholin: 2001, 257)

In a hectic project-oriented environment there hardly is enough time to monitor and measure communication all by itself. Therefore communication measures need to be integrated to project meetings and project reporting.

Each person is responsible for his/her own communication. Self-assessment could easily improve the quality of communication by a couple of quick question prior to communication situation. After determining why are you communication, to whom are you communication and what is the context of the message, you can focus on the six C's of effective communication and make the information: clear, concise, courteous, constructive, correct and complete. (Stanton, 2004, 7)

According to Robertson (2002) and the pyramid model the best case scenario in communication is that the message could be seen as change in action throughout the organization. Picture 16 demonstrates the levels the message faces before changing the behavior of personnel.



Figure 16 Quality-pyramid for evaluating successful communication

A customers' satisfaction is formed from the perceived performance of the product and the buyer's expectations. Company should make the effort to keep its current customers since attracting new customers is estimated to be five times the cost keeping a current customer happy. There is a close connection among product and service quality, customer satisfaction and company profitability. Therefore when thinking how to keep the customer happy, the company should also keep its internal quality standards high.. (Kotler, 1997, 47-58)

Customer satisfaction should be measured with credible measures and those surveys should be done periodically. This enables an accurate comparison and measurement of results and thus the progress of a company's customer satisfaction. (Bergström, 2007: 430)

Meters are a way to follow up on the progress and effects of the communication plan. Usually a definition of a good evaluation meter for a project or scheme is that good appraisal methods are always unique, relative and contextual. This mean –unfortunate – that the wheel needs to be invented again. Each project should have its own tailored evaluation models. (Jalava & Virtanen, 2000, 112)

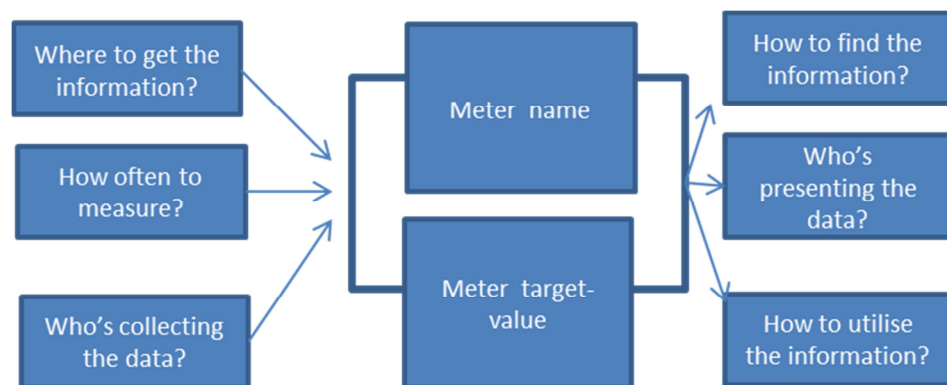


Figure 17 Details to be agreed for each meter (Hämäläinen & Maula, 2004, 130)

Some good tools for evaluation are for example constantly evaluating one's own work as a communication professional by making observations, asking questions and self-evaluating the quality of materials etc. This can develop into a constant loop of improvements and new ways of working. You might ask a couple of question each week and document those from a longer time period. The questions should be asked frequently from variety of stakeholder groups and the material will be plenty after a while. In these quick questionnaires it pays off to focus on the essentials and rather ask one thing at a time. (Juholin: 2001, 259)

It is not always justified to conduct arduous researches of communication success when for instance mere email-queries can find out the answers. In case specific measurements want to be carried out below is a few ways to conduct those.

- Questionnaires: e.g. form questionnaire can help to obtain fixed form information from large group of people relatively easily. Planning is essential to guarantee the quality of the responses.



- Interviews: Interviews are good way of getting qualitative information from key persons. The group of people in interviews is noticeably smaller than in questionnaires, but the information received is more versatile and deep.
- Electric measurements such as internet or intranet surveys are an alternative to traditional questionnaires and they can be conducted anonymous. They are also cost efficient but relatively easy to dismiss.
- Publications content analysis: as an outside assessor the published material can be evaluated concerning its content.
- Quick feedback: success or failure in communication can also be very quickly be discovered by sending a quick and easy email to people involved or by asking in a meeting everyone to shortly comment. (Hämäläinen & Maula, 2004, 135-139)

From follow-up and assessment the thesis moves next to represent the empiric research in form of conducted interviews. The most important findings from the interviews along with interesting notices are written in the next chapter.

## 4 EMPIRICS

This thesis collects empirical information by interviewing persons that work in a project-oriented company in high technology sector. The persons were selected to these qualitative interviews to represent both project managers in high technology sector and project team members. Interviews were conducted as face-to-face interviews, one phone interview and two email interviews. Appendix 2 and 3 present the questions asked during the occasions.

The advantage of this kind of qualitative research is that it allows a focus on a specified phenomenon or research problem (Hirsjärvi & Hurme 2001). Since project management and communication cannot be taken out of their context as they are clearly intertwined, qualitative method is applicable to study implications of both together.

Interviewee A's role is Program Manager at a large company in telecommunication industry. He has a double role as he works as program manager and at the same time is the head of a testing team. His interview was conducted face-to-face 20.2.2012.

Interviewee B works for a global project-oriented company and her role in project is technical team member. She has been involved in several projects during the last ten years. Her interview was conducted face-to-face 12.3.2012.

Interviewee C works as a Program Manager in a global high technology manufacturing company. The company has a strategy that includes long-term partnerships in subcontracting. His experience covers working as a

technical specialist in projects to now leading projects. His interview was conducted via phone 27.3.2012.

Interviewee D works in high technology software development company. His role in projects is a technical team member and a leader of a specialist team. His interview was conducted face-to-face interview 6.4.2012.

Interviewee E works as a Program Manager. The company she works for is a multinational company that has also joint ventures in technology. The company has a wide network of trusted partners and suppliers. A big part of the company's business is outsourcing for telecommunication companies. Her interview was conducted via email 10.4.2012.

Interviewee F works as a Program Manager in a global company that manufactures designs and assembles hardware for high technology companies. The company targets for long-term partnership with customers and its networks. His interview was conducted 11.4.2012.

### 4.1 Project Manager's role in communication

When asked about the interviewees' role in communication, Project Managers define their tasks to include building the team spirit, supporting and most importantly ensuring that everyone knows what their expectations are. Interviewee A believes in personal approach and tailored messages to each team member since all of us have different ways of receiving and interpreting information. When managing professionals in their own area of specialty it is best to coordinate the actions and let the specialists work their magic.

Interviewee C is also working as head of a project. He feels that all Project Managers tasks include analyzing and communicating the entire picture, the birds-eye view, of the project: what is the project aimed for, what needs to be done and how actions affect each other etc. When PM visualizes the project as an entity he/she can analyze it and modify the style and tone of the information to others according to receiver. A good example of this is the project flow chart that gathers all phases of the project into one visual element. A good PM listens to problems and issues the team members have, then he analyses their effect on the project, fits them into prioritizing queue and most of all simplifies them.

From team members' point of view, interviewee B expects PMs to be on top of things all the time and to be able to draw quick and precise conclusion. Other important task of the PM is to coordinate, follow-up and give feedback on activities. Interviewee D emphasizes the importance of independent work as a team member. As a team member he targets to be proactive in communicating with project manager, customer and other stakeholders, of course all the time honoring agreed practices.

Interviewees F and E describe their role as communication moderator in projects: they enhance communication and cooperation within the project internally and externally, and control that relevant information is shared and utilized. Interviewee C mentions his role includes being in charge of de-escalation. Interviewee F emphasizes the importance of communicating project requirements and customer/management expectations to the team.

The interviews support the theory that Jalava and Virtanen (2000, 35) have drawn, as presented in figure 18, expectation for project manager role. In internal communication the PM is seen as integrator building and strengthening the team to be geared up towards project goals and working as one unit. As present actions the PM plans and organizes communication and actions. This study does not include customer interfaces so those parts cannot be estimated, but the role of intermediary does come visible balancing and building bridges of relationships with other departments and management.

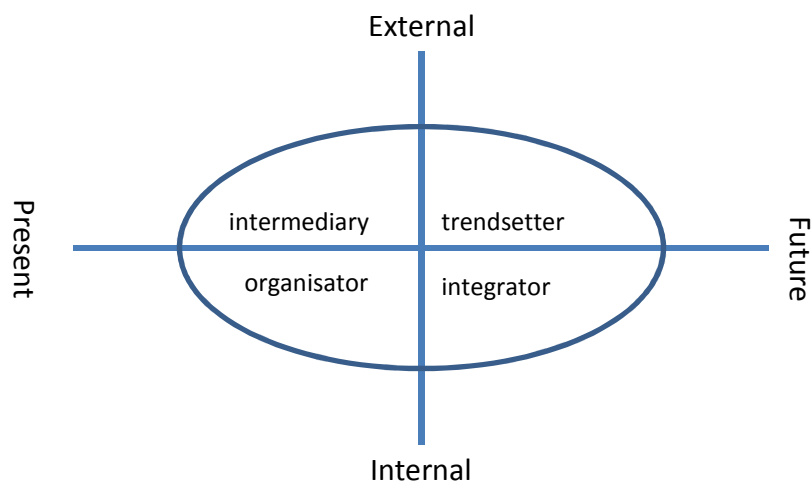


Figure 18 The roles of Project Manager (Jalava & Virtanen, 2000, 35)

In high technology project environment the role of project manager is important especially as integrator. Since team members are specialized professionals and all most of the work is done under some kind of time pressure, getting the teams working together best they can as fast as they can is a challenging task for the PM. He /she should be able to bring out the best abilities of each team and person and harvest them to serve the project. Luckily most persons that have experience working in project oriented companies are already used to the rhythm, constant changes (project scope, team, schedule, specifications etc.) and working as part different teams.

When building the communication strategy the strong role of Project Management needs to be taken into consideration, but it is important to draw the ground rules of each teams/person's role and task in communication. Is the quality team allowed to communicate test results directly to customers? When should the Indian team submit their daily reports?

### 4.2 Communication channels

All interviewees share the opinion that co-located teams are most efficient because of the constant exchange of information face-to-face. Besides the official emails, information updates to different tools and team meetings there is a lot of informal discussions where opinions, information are exchanged. This helps to improve the atmosphere and relationships among the team. Interviewee A sees it as a good tool to brush the people management, keep up the conversation and tell a view jokes.

Daily/weekly team meetings are seen as a good tool and a forum to share and receive information. Problems can arise if some department or person is not willing to share information, or if the person with information is absent and no-one else has access to that info.

The importance of storing historical data in project communication templates and collecting the data regularly was emphasized by every interviewee. For example if there is a project report in use, it is best to keep the older versions either available in some data-storage or have the historical data in the reporting in case the file is still reasonable in size. The challenges that can come from storing a lot of historical data is finding the latest and relevant information and finding suitable data management tools.

Interviewee A states that in project communication information needs to be visible at one designated place e.g. wiki-type of web-page or other system that shows a snapshot of the day's status with cumulative, targeted history information. This type of system also requires commitment from the team members, but if you do it properly once it pays off in the long run.

The best way to communicate clearly is to meet face-to-face according to all interviewed persons. Interviewee E feels that way messages exchange is easiest and there is less room for misunderstandings, also the motivation to digest the information is better. Phone conversations are the second best alternative, but even then you might miss the full attention and the visual feedback. Communication via email leaves the responsibility to read, interpret and response to the receiver and the sender has the least control over the reaction. She emphasizes the meaning of joint regular meetings with team members as good communication management tool. Meetings help arise open questions and enhance discussion about different matters. Everyone should join the meeting even though they might not be in an active role at that time. Since all project targets are common the discussed matters can and most probably will affect the team members work.

Interviewee B sees emails slow and unreliable in the modern world where quick response is essential. Instead she prefers company internal chat-tool which is online, interactive, dynamic and immediate. The internal chat-discussions can be saved like emails, but they seem more informal and personal.

To mention some good tools for project communication interviewee C names weekly team meetings as functional tool when all team members are present. For some cultures a detailed action tracker that lists and follows up every task the team members have is a good way follow, simplify, remind and commit the team to actions. In a fast moving telecom projects schedule follow-up is very important and the tool should be easy to understand and use. The action tracker follows the actions and process and logistics flow chart draws the big picture how details are linked together.

Interviewee C emphasizes the importance of simple and visual documents to communication success. Everyone in the team should be able to understand how to read and use the template and the tasks written in the documents. Good visual appearance and logical framework help to synchronize the updates. The PM believes in simple, professional and straightforward messages with clear lists of actions and time limits for them.

### 4.3 The best and the worst in project communication

Interviewee A sees risks in communication in case team members do not share the status updates and their achievements, problems or other issues with the project. He feels that in case someone has done a mistake, the person should be found to make sure that it won't happen again. He feels it is also essential to follow what has happened and what went wrong.

Giving internal information to customer, forgetting to share important data or deliberately withholding information are issues that interviewee D sees as a risk in communication. He sees as potential failure in communication matters when project team is not up to date on current issues and needed actions followed by exchange of misinformation or lack of communication.

As team leader one should know his/her teams level of knowledge and tendencies to interpret information, in other words know your communication target group so well that you can formulate optimal messages for them. The team should also know its manager well enough to have the courage to communicate with him/her. Problems can arise in case the team and distribution is very big. And of course PM should know his/her team members all the time, including sudden changes in personnel.

In project oriented companies project communication is usually guided through different processes and tools and predefined channels like steering meetings. For example in interview A's company the project progress is followed up and estimated frequently in different phases. Documentation for these events is fixed form and gives the audience/stakeholders they are looking for. Communication to company management is in normal situations managed via fixed form reports.

Interviewee B thinks that in these types of racing technology development companies the voice and ideas of the “grass root level” are left with too little notice. For example in telecommunication there are interesting and original ideas within the company’s many engineers and also the talent to execute or at least describe how to execute them, but many good ideas are trampled with bureaucracy and many layers of management.

Interviewee B feels that project communication is most efficient when the team is racing a strategically planned race towards common goals whilst updating the most recent detailed information for others to utilize. The Project Manager is holding the strings and following the status of different tasks and project overall status constantly. It is his/her task to acknowledge the severity of potential risks and possible impact on schedule, cost, implementation etc. The quality of information, it being accurate and topical, is important when drawing conclusions to define the critical path and prioritizing issues.

A part of organization culture is the willingness and openness to share information among the team and the company. Interviewee B (also mentioned by interviewee A and D) brought out the problem that all information from (company/project) management might not be openly shared by the team leader to the project team.

She also feels that collecting all project related information into one place makes updating and retrieving information a lot easier. Automated information updates from different tools also improve the reliability of information. The problems all teams face is that people have different ways of filling reports, updating information and different concepts of updated information: sometimes the most recent data is not updated in the tools/reports etc. Making the updates as easy as possible helps to minimize the step to do that, despite this there is still room for mistakes and technical breakdowns in information.

The company utilizes Scrum project management approach which is designed for iterative and incremental software development projects. Scrum also helps to define and plan communication and team meetings. For example there are 15 minutes meeting every morning to define the day’s tasks within a team.

Interviewee B feels that cultural differences can cause some problems in communication. For example one cannot be sure of the other person’s language skills in English so it is best to use simple and clear expressions. Also there are differences in the meaning of expressions for example “I will send it to you today” may not mean that the actual sending happens today but sometimes within the week or so. Problems may also arise in case some information is held by only one person. If this person is not available (vacation, sickness, dismissal etc.) and no one else has access to the needed information, proceeding decisions are hard to make.

Communicating via emails is not the same as talking face to face. Still some Chinese people sitting close to each other send emails as reminders

and one kind of evidence of their hard work. If PM interferes in this message exchange among team members, he/she easily becomes the center point of all message exchanges.

The best case scenario for project communication in interviewee D's opinion is that everyone in the project has a clear vision what information is needed for whom and what kind of interval. This means determining clear rules and roles for all in the beginning and following those rules during the projects. The company has agreed that in case there are situations out-bound of agreed rules, the best practice is to follow company values and ethical guidelines.

Interviewee E wishes for open and honest communication in project management, a kind of global business language and behavior. But she also admits the problem of dealing with different cultures that have different expectations for communication situations.

As one key point of communication management interviewee C states to be the extent of the direct subordinates the PM has: are all the team members reporting directly to the head of the program or are there team leaders for sub-teams. The bigger the team the harder and more unpredictable the communication is: it is to make sure that the messages are received and understood right. If the project team is very big, it would be good to divide it into specialized groups and have one person running the team. On the other hand the PM does not control the information going to the sub-teams but the team leaders hold the responsibility of that.

Interviewee C tells about his colleague who had an agenda to improve his personal skills in communication and professionalism. He wrote down a list of everything that could have been done better together with improvement suggestions. It is a mystery whether the list was actually put to use and read later on. The same colleague had some restrictions for project team communication as well. Team members were allowed to send one email per day collecting all relevant information to the same post. Perhaps this kind of strict rules and restrictions are not the best possible approach in a dynamic and hectic environment. He also held strict limits between working and personal time: he did not answer the phone after office hours. If some important person cannot be reached, the project can suffer.

Interviewee F feels that the most efficient strategy in communication is to agree a set of rules in the beginning and make sure everyone comply. The agreement should according to him include: common language, rules of communication (agreed upon interruption system to ask questions, open sharing of ideas and opinions, etc.), also keeping the focus on facts not on people, get to conclusions and proposal in each form of communication and not keeping open statements.

Small things can affect communication projects are the customs that people have reading their received emails. Some people read their emails from oldest to newest which means that if he/she replies to an email someone else might have already gave an answer (with 800 unread messages this is

becoming an issue). People working in high technology projects expect the key team members to be available most of the time and up to date on current events. Time zone differences complicate communication.

The communication in subcontracting projects adjusts to the communication style of the customer. In every case the customer must be treated with respect: having the courtesy to check emails for misspelling, being on-time in meetings and replying with little delay. Creating ground rules at the beginning of the project of roles and responsibilities together with small details like who is the one replying to customer, what is the targeted response time, what details must be confirmed before actions etc. help to make the communication flow fluent and clear for everyone in the team.

It is a huge benefit if the project and especially Project Manager has good relationship with customer. Positive relationships create more tolerance in difficult situations since customer is more willing to be flexible in interpretations. For example in on case where a change in design that had caused a significant change in manufacturing cycle time thus creating extra costs in production. Due to the fact that there was a communication failure within the project this fact was not brought to the customer's attention when it should have been. With the help of good customer relationship and negotiation skills this issue was successfully negotiated for mutual benefit.

#### 4.4 Special features of high technology project communication

Interviewee A describes high technology projects' special feature to be very short development period and schedule challenges together with rapid changes. Projects have always a beginning and an end and development is happening in between which means that communication changes shape, tools, form and stakeholders according to the project phase. Typically in these projects data collections are tied to different types of tools: reports, forums, data management systems, etc. But even the simplest reports can be filled various ways or less frequently than expected which causes extra work for others. Wiio would say: *If a message can be interpreted in several ways, it will be interpreted in a manner that maximizes the damage (Wiio, 2009, 62).*

Well functional projects according to interviewee A have a designated cycle of meetings and steady flow of sharp communication. In project oriented companies the receivers of information are established within the organization and their roles are pretty much the same from one project to others - so they know what to expect. Even though every project is unique, the responsibilities of specialized project personnel, management and other stakeholders remain the same. Project personnel changes are constant and inevitable, adaptation abilities are "must".

In interviewee A's company the project manager has a lot of power over operational matters, project planning and execution. He is also a part of



the project steering group which makes the strategic decision in longer run and prepares communication material to back up decisions higher management is involved in.

Interviewee B lists the special feature of high technology projects to be the established exchange of information, well prepared documents and report and the fact that the history information is digitally well stored because of the different tools that are used in all projects. This should help to improve the project processes. High technology projects are according to her nowadays geographically scattered causing communication to be affected by time zone differences, to be more conducted via emails, telephones and other digital channels, unfortunately cutting out the unofficial lunch discussion and hallway talks.

Interviewee C states as features of project communication to be challenging information chains that require proactive communication of matters that at one point affect only on person from the team, but when processing the issue further it will gradually affect the whole project time-wise, risk-wise or cost-wise. The team members should be able to predict the affect the issue will have on their own involvement in the project. Project manager wants to share the information to everyone as good to know information, but the email chain can break off when the receiver replies leaving others recipients besides the PM from the distribution. This many-to-many communication is challenging the project manager needs to make sure that everyone is up-to-date on important changes.

Interviewee D describes that in the beginning of a project the tasks typically include more aspects of planning and risk management. Communication is typically more proactive, whereas later in the project's execution it is more reactive and focuses more on maintenance and problem solving.

It seems that in high technology development project the PM has quite a lot of power for operational issues. Depending on the company sometimes the project manager can get caught up in small operation details or intermediary of information instead of managing the big picture.

In interviewee D's experience high technology sector projects face continuous schedule pressure, constant changes and involve teams and/or persons with very specialized expertise. This is precisely what Chin (2003) wrote about agile project management environment. Agile PM Environment = [Uncertainty + Unique Expertise] x Speed (Chin 2003, p. 3).

In project oriented companies, especially in high-technology where resource allocation need to be reviewed constantly too keep a balance between workloads, team personnel changes during a project are likely. Interviewees E and F point out that each team has to go through a forming phase in the beginning of the project which is different than from people working in fixed organizations. New team members need to be trained to the working habits and communication style of the project, old ones to be re-trained, etc. This consumes a lot of effort from the project and team leaders.

Project manager's communication and leadership competences are put to use in projects. Projects operate most of the time in matrix organization with multi-discipline and cross-departmental teams that have project allocated resources. So the project manager is not directly the supervisor of team members. In case there are difficult situations, the PM needs to involve the direct supervisors to the discussion and sometimes even to get full support from the team (time- or quality-wise).

Other mentioned daily challenges in projects are difficulties in finding mutually suitable time for meetings due to time-zones and hectic schedules, complying with agreed rules, finding a common terminology in teams that include people with different backgrounds and training and flood of abbreviations.

One aspect of project communication is that there are a lot of emails concerning the project status pouring to team member's inboxes. There can be up to 200 emails per day; some of which include important action-points, some are "nice-to-know" background information. The team should actively filter the communication and yet find the key messages and pieces of information that can possibly affect their own area of project work. The interviewed project managers seemed to prefer getting "too much" information rather than missing out on some important emails. Therefore the PM has to keep up with his/her email-flow and filter needed and relevant information from minor details.

### 4.5 Project stakeholder communication

Project stakeholders are either project internal participants who work within the company, project internal participants working outside the company (suppliers, customers), company internal stakeholders or other parties outside the company. Communication within the project is usually conducted with tight interactions in meetings, phone-conferences, phone conversations, emails etc. The difference in communicating with suppliers and customers to communication with company internal resources is that one has to think how to present certain matters to suppliers and customers. For example best succeeding (such as being ahead of schedule) and worst failures are best to leave unsaid if they are not directly affecting negatively the project schedule, risks or costs.

Communication to management is also not as detail focused as project internal reports. For company program portfolio steering group the communication is directed via collection report that consists of snapshot of all projects. The most important part of this communication is the use of resources in projects.

An interviewed Project Manager (interviewee A) working in internal projects points out that since end-users are not their primary customer, the

projects real customers are company management and the next product processing step. Management will base their decisions based on the communication from project: data can be in various different formats such as reports, steering group meeting memos, inputs in some data management tool, presentation or emails.

Interviewee A holds project steering group meetings where subcontracting partners are also involved. The nature of the meeting is not drilling to every detail but focusing more on the bigger picture of the use of resources, big changes or problems. There are companywide guidelines of what kind of information can be shared outside the company and what are strictly only for internal use. The progress of the project is of course communicated clearly and honestly which is also an obligation of the project head. Possible negative matters concerning the customer company are shared in more positive light to keep up good appearances and company reputation.

Interviewee C stresses the tones in communication of issues and problems with customers. If there are problems, one must always have corrective action-plans, schedules or at least some actions to recover the issue available in order to keep the customer's trust. In written communication it is especially important how the matters are presented because messages and reports are easily forwarded or escalated within the customer company.

Interviewee C feels that it is important to lay the ground work for communication in the beginning of the project meaning that there is commonly agreed policies of who communicates with customers and on what matters. Some projects prefer "one-window" –type of communication where the Project Manager coordinates all communication with customers. On the other hand being involved in customer meetings enhances the team member's commitment to the project.

Communication to other company internal stakeholders normally takes place via various reports, project set up –meetings where the invitee list is very long, or direct information requests to project manager.

As Program Manager interviewee C does not interfere with communication to suppliers, he trusts that in hands of purchasing professionals. The material procurement this way will hold the responsibility of supplier communication; if the PM would interfere the responsibility would most probably shift to him also. As vertically integrated company they have partners that deliver to the customers also. The partners are managing the communication to customers themselves.

The nuances in communication tone depend on the stakeholder-group in question, according to interviewee D. When communicating with customer the tone is always polite, procedural and formal. Also the methods are more traditional like emails, phone calls or meetings. With internal stakeholders' people in use company chatting system, pay a personal visit or can have ex tempore meetings. With customers and other external stakeholders the meetings are always booked in advance.

Interviewee F trusts the communication towards customers and co-working competitors to his sub-project leaders even though it is not defined in the company's communication strategy. Still he feels responsible for the communication and follows and controls it from distance.

Interviewee E feels that all first tier team members are the most important stakeholders in project communication as they all have similar need for communication. Project success is a joint target for the team, not just for a group of individuals. Presumably this is the fact that makes the project work to equal more than the team members competences summarized together: mutual desire to strive towards a common goal.

Interviewee F categorizes project stakeholders according to the information they need: project team members are served with the most information including smaller details also, company management is provided the same report as a communication package but with more high-level summary to give the big picture. As a standardized package their customer gets a "medium level" report with information-value somewhere between the management and team report.

Giving directions to project team along with detailed facts and follow-up and serving strategic level management with key facts supports the view presented by Ruuska (1996) as seen again in figure 19. But Ruuska also states that project portfolio management is supplied with detailed meeting minutes and follow-up reports. According to the interviews portfolio management nowadays focuses more on the big picture as holistic view since high technology companies execute project oriented working more and more because the pace of technology development is so hectic.

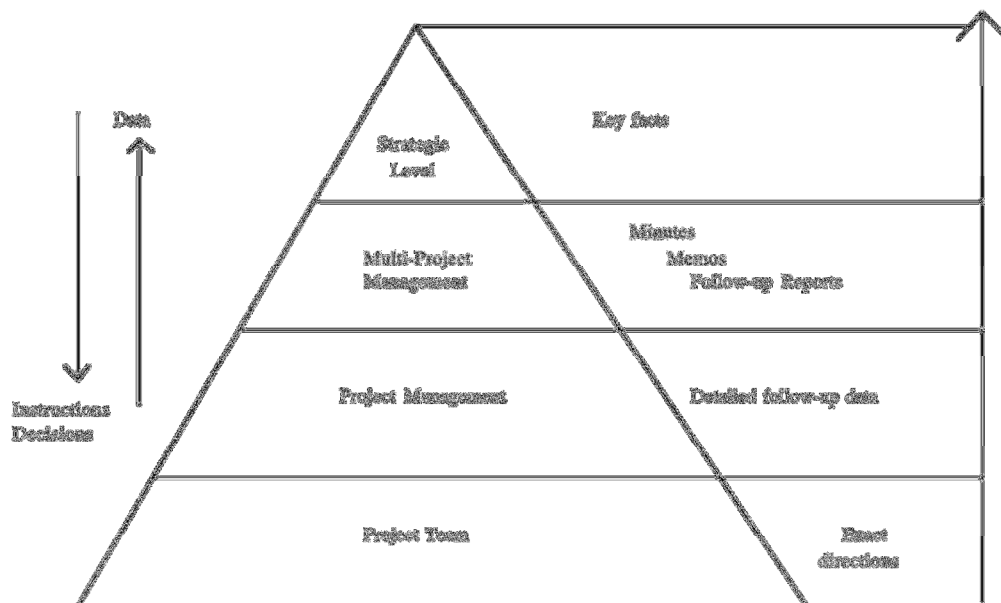


Figure 19 Information exchange in the organization (Ruuska, 1996)

#### 4.6 Communication strategy in companies and projects

Väänänen (2010, 129-130) concluded in her study that companies had had only limited efforts for developing project communication which resulted in communication challenges. The same applies in this thesis as well. Interviewee's recognised very limited efforts to manage and plan communication.

The question concerning communication strategy was divided into three parts in the interviews. First question was about communication strategy in the corporate management level and the visibility of that in the project management. The second question asked about communication strategy planning in the project level. The third question was what kind of strategy in their opinion would best suit projects.

When asked if the interviewees are aware of the company level communication plan in the enterprises all of them admit that they lack the information. Interviewee A says that even though he is not aware of the communication strategy communication in the company has improved lately and he feels that communication works rather well. In interviewee D's experience many his colleagues still follow a communication strategy designed for a company that has merged as a part of another company.

Interviewee B assumes that the company has a communication strategy stored somewhere. She does use corporate documents, templates and other type of guidelines she has access to.

Interviewee C has adapted to the communication culture in the company even though he is not aware of the communication strategy. He has followed the confidentiality practice after discussions with colleagues and peers.

Interviewee D feels that successful communication strategy in projects starts from documents and knowledge management planning. As a software developer he believes in intranet or other well protected project webpage where all relevant documents are stored along with their revision-history.

Even though there would be a company communication strategy utilized in the company, interviewee F thinks that such a general level plan is not enough for as detailed and specific actions like in projects and would be insufficient describing the working-level requirements to function as a team. A team forming and bond tightening phase in each team is always required and can hardly be solved by company level communication strategy. Helpful however would be "code of conduct" defined by the company communication department.

Despite the fact that company communication strategy is not exactly clear to the interviewees, they all are aware of company guidelines/rules for communication, such as company confidentiality policies, visual guidelines etc. For example interviewee A follows company quality documents

when starting a project: there are certain team meetings required, document templates ready. According to him problems usually arise when management or other decision-making parties start cutting corners in high schedule-pressure. The second interviewee also stressed the importance to keep the agreed rules in projects.

The interviewers see some links from the project communication to company level communication strategy in liaison with confidentiality clauses, corporate image and document templates. In some companies the touch of corporate communication department could more visible. The Project Manager C wishes for more united appearance in certain templates. He also wonders why there is not a common template to be used for scheduling; now instead all the PMs have their own set-up for the documents. Marketing & communication department has defined the targets for corporate image, but its execution could be more followed-up in the project environment.

The company of interviewee C has invested heavily on a project management program that has been implemented into use for quite a while now. The program would harmonize the appearance and logic of all reports and templates and enable cross-portfolio follow-up also in detailed level. Unfortunately the use has been seen hardscrabble and too inflexible by the project teams so the utilization of the program has been low.

On the other hand when discussing about the project specific communication strategy almost all interviewees say that their projects have some sort of communication strategy. Normal procedure seems to be brief discussions about communication rules and roles in the beginning of the project. If needed the set rules can be enforced and repeated during team meetings.

Projects have a sketched communication strategy, either a copy-paste from other projects or a rough 5x5 boxes matrix with planned meetings and reports. In some cases this is enough for an ever-changing environment since people tend to function according to processes and corporate culture. Topics that would require a bit more focus in the beginning are meeting and report schedule, ground-rules of who is responsible for communication on specific topics and what in general are communication targets in the project. In subcontracting projects the schedule for weekly meetings and internal reports are mostly formed based on customer meetings and their requirements for information submittal: if the customer meeting is held Thursdays, then a good time for internal team meeting is Tuesday.

There is a part in the Project Plan template for communication plan in interviewee A's company, but the field is usually filled by copy-pasting from other projects. As a result there is not a valid and topical communication plan executed in projects. Important matter like obligation to secrecy, confidentiality clauses are repeated beginning of every project. The project continues on its development path that is guided with coherent templates set for project follow-up milestones or steering group meeting reports. The PM holds the ultimate responsibility over all communication. The strategy is directly linked to the project overall targets and progress.

### 4.7 Knowledge management

Knowledge management in interviewee D's company is mostly taken care of by detailed documentation: fixed templates, project memos, handover documentation etc. They also have a very precise and detailed CRM-system that store quite a lot of data concerning customer history: problems, contact persons etc. That kind of documentation requires activity in reading the text through, but also helps to preserve the data even if relevant persons are not available.

Intranet pages are a good tool for transferring information or for example storing document templates. However in an international company cultural differences can affect how actively people visit the intranet or read the documents. Also if the system is not built to store large numbers of information, it can become a data junkyard.

Lessons learnt databases are theoretically a good way of communicating the information between projects, supervisors and team members according to interviewee E. In her practical experience this is not unfortunately working very well. Face to face communication or informal talks are most of the time more effective.

Knowledge management has some emphasis in interviewees' companies. Lessons learned events are held where all the team gathers to one place and views failures and success-stories. Lessons learned documents, and lessons learned document libraries are stored in the companies but the utilization of those documents are seen as hardscrabble. One should basically read through the library. One of the companies is planning to implement a news flash type of approach to lessons learned and present some of latest program lessons learned in standard organization meetings. Interviewee A mentions that even though lessons learned are gathered and studied, in very few cases there is opportunity to make changes/improvements due to bureaucracy.

Interviewee F believes in constant lessons learned process. He feels that the all relevant information should be stored in project weekly reports where they can be utilized all along the project.

A lot of knowledge transfer is based in hallway discussions among the team members and their peers. In case there are personal changes during the project, most of the documents are stored in project related team rooms/intranet pages/other project related document library. However mere documents are not always enough for the successor.

### 4.8 Communication follow-up in projects

Project communication is randomly followed up by project managers. The success of communication is seen to be so seamlessly welded into the

overall success of the project that the measures should be integrated into the project performance follow-up.

Interviewee A does continues self-assessment of his team's communication. He has his own quality standards that he compares against the company quality standards. As Project Manager he feels responsible for what is being communicated and how it's organized. He also has one-to-one discussions with the team members where he addresses mistakes, issues and other topics. He feels that open and honest approach works best in an environment with specialized professionals.

Interviewee A uses personal visits and discussions as a tool to control that the messages have been received and understood the correct way. He works as the head of a local team and his colleagues globally do the same. He feels that this works best in teams when there is a local team leader present and ready to tailor and convey information for the team.

Interviewee C follows project communication quite frequently in weekly meetings and observing the quality of reports sent by team members. The company also has KPI (key performance indicator) measures defined by management that have some references to communication. The Program manager has some flexibility in rewarding the program team of good results. At one point he tried to measure efficient communication with quantitative measures: he had the team members graded for submitting reports on-time, participation rate to weekly meetings and as numeral value for quality he measures to whether the team member has saved the reports to database for other team to view. Unfortunately this quantitative follow-up wasn't feasible in high technology kind of rapidly changing, dynamic environment. Some actions in the reports were only valid for very short period of time or they could not be closed at all due to other limiting issues or unexpected changes.

As a sub-team leader interviewee D sends a questionnaire to internal stakeholders twice a year related to all projects the team has been involved in. The questionnaire has some points about communication, but more in general the answers tell about the motivation and competences of the team. The company communication department carries out a customer satisfaction survey once a year. The survey targets to measure the customer interfaces professionalism, motivation, response time, adequacy of documentation and of course customer satisfaction. The replies and feedback are carefully examined and development plans are agreed.

Interviewee F would measure project communication with numeric measures such as number of emails to give indication whether relevant information has been communicated within team. One indication of successful communication and team motivation is the participation rate to meetings. He measures communication also with action tracker issues assigned to certain team members being marked as closed on time as a good indication of communication success. Action tracker is the document used in the company to gather all open issues and actions to be performed in order to keep schedule and drive the project forward.



“Good communication should be reflected in good project success”, says interviewee E. She feels that if there has been KPI measures (such as quality, financial measures, on-time-deliveries etc.) defined for the projects, communication follow-up measures follow those hand-in-hands.

## 5 CONCLUSIONS

The importance of communication in projects is indisputable. A complex project needs a functional, clear communication plan and capable team to execute it. The plan however should be flexible as the nature of projects is iterative it may cause changes for communication needs also. Product development project usually progress in sprints (Whitaker, 2009, 269-270).

Communication has three main functions: connecting, informing, and engaging (Boone, 2000, 7). In a project environment integrating could be added as a fourth element. In the end projects are about integrating different competencies, knowledge, organizations, technologies, networks etc. working together in order to create something bigger and greater than the sum of the parts equals to. Project manager is in leadership position what comes to integrating: he/she needs to see the project as an entity and find ways how everyone involved can utilise their own strengths and core competencies.

Project managers’ tasks are to make decisions concerning the project, help in problems solving and otherwise be on top of all issues in the project. Projects managers key responsibilities can be drawn down to project coordination, problem solving, leading people and making decisions as presented in figure 20 (Siikaluoma, 2012, 43)



Figure 20 Key responsibilities of a project manager (Siikaluoma, 2012, 43)

**The first research question was: “What are special features of communication in high technology project environment?”**

In high technology the product development project environment is dynamic and changes are constant. This is added by different specialists that have their own areas of expertise and multiplied by speed, or quickness of actions. The surroundings are not the easiest possible, and there is high pressure of succeeding in a complex challenging environment since there is a lot invested in technology projects. This is represented by Chin (2003, 3) in a form of formula as seen below.

Agile PM Environment = [Uncertainty + Unique Expertise] x Speed (Chin 2003, 3).

Companies operating in project oriented way use a lot of time and effort planning project operations and ways of working because it is part of their core competencies. Unfortunately communication itself has not had the attention it would require. The groundwork related to processes, documents and resource planning typically are well managed. Project communication is highly affected by the utilized data management tools. For a subcontracting company the tools and communication processes should follow the customers' requirements and practices.

One target of the study was to research special features that high technology project management environment brings to communication and its management. Literature and empirical research both emphasized the fast changes and the dynamic, turbulent environment which forces communication structures to be flexible. It also calls for clear, well planned and organized roles and responsibilities, messaging channels and document management.

Projects are team work, and in current global business, teams are more and more scattered around the world. Time zone differences are one issue to take into consideration and cultural differences can also affect the interpretation of messages. In distance teams communication is bound to take place via remote channels like email, telephone and indicated data management systems. Communication within the team is largely tied to the utilised data management tools. The tools should be organised in consideration of the actual work in projects and the information flow related to progress of the project. Integrated systems with automated update possibilities are seen as best in order to have up-to-date information available to all as soon as possible.

In project oriented companies, especially in high-technology where resource allocation need to be reviewed constantly too keep a balance between workloads, team personnel changes during a project are likely. Interviewees point out that each team has to go through a forming phase in the beginning of the project which is different than from people working in fixed organizations. New team members need to be trained to the work-

ing habits and communication style of the project, old ones to be re-trained, etc. This consumes a lot of effort from the project and team leaders.

There are four distinct characteristics of high technology products that companies in this sector are affected by:

- 1) The tendency to worry customers (communication needs to educate consumers of the new technology and its effects e.g. safety and make them comfortable with it),
- 2) The need for efficient time management (short product life cycle creates marketing time limits,
- 3) The direct cooperation with the R&D department and
- 4) The ever-changing conditions of the markets. (Viardot, 2004, 27)

Project communication environment is shaped mainly by the scope and target of the project, need of fast actions, availability of resources and utilised communication tools. Project manager has a visible and important role in leadership and integration. The PM needs to grasp complex reciprocal actions and implications to the project. Communication processes include exchanging information, developing mutual understanding, coordinating activities, influencing and socialising.

### **The second research question was: “What kind of communication strategy is most efficient in projects?”**

According to the Project Management Institute (2004) the phases of communication planning are: Communications Planning, Information Distribution, Performance Reporting, and Administrative Closure. The book emphasizes the importance of communication management plan which is the output of communication planning process that includes the environmental factors, organizational process assets, project scope statement and project management plan. (PMI, 2004)

In practice project communication usually flows around the project planning, execution or other phase of the on-going project and not much emphasis is paid to either communication planning or its follow-up. However normal team members need to know practical instructions concerning their everyday work: guidance to the used tools, understanding what is expected of them and preferably where to find support if needed.

The most important notice in project communication planning is to ensure everyone involved in the project are aware of the project target and purpose. Communication and motivation take a leap forward when all team members are rowing together and know which way to go.

Project communication is communicating project targets, results and applying the results into practice, project team members and near-by people commitment to the project, building team spirit, clarifying the project scope and target in all phases and receiving feedback and utilizing it during all project phases. Project communication is not just some small detail

area of a project; it is various different interaction situations during every single moment within project. (Juholin, 2008, 260)

The best case scenario for project communication is that everyone in the project has a clear vision what information is needed for whom and what kind of interval. This means determining clear rules and roles for all in the beginning and following those rules during the projects. The company has agreed that in case there are situations outboud of agreed rules, the best practice is to follow company values and ethical guidelines.

Other aspects of communication strategy are the high-level targets planned to for example shape customer perception of the company as a manufacturing partner or internal atmosphere around project execution. It was said to be best practice to communicate facts with formal procedures and guesses, feelings and hunches with informal discussions, both at very early phase.

Väänänen found in her study (2010, 132) that project communication plan should at least include the following aspects:

- the purposes of the document;
- hoe to find information (e.g. links to intranet and documents management systems)
- how to transmit information i.e. guidelines for most typical or recommended media for project communication, and a communication matrix including the following aspects: what information, when, whose responsibility, how and to whom;
- how to operate in certain situations;
- where to find support about project communication.

High technology project environment requires communication strategy to be planned and well thought of, but still agile and flexible. Long written texts or deep analyses are useless even if they are enforced by management. They would be more likely copy-pasted from other projects with very little thought. The most suitable way is to discuss important matters like project target, preferred communication style/channels/etc. in a team meeting so that everyone involved understands the purpose of the project and its communication.

In project operations where time is money and no one has desire to do meaningless work, communication strategy can cut some corners. There is hardly need to deep research on current state analysis or invent the wheel again. Hämäläinen and Maula's (2004, 76-77) structure for communication strategy as seen below functions well in projects with a couple of changes presented in table 2.

Table 2 Project feasible communication plan

Hämäläinen and Maula’s communication plan structure (2004, 76-77)	Project feasible application
Current state analysis	Current state analysis in case project has received as handover from sales etc.
Setting targets and defining the project	Describing the project. Setting and agreeing the project communication targets. Agreeing terminology, rules of communication (agreed upon interruption system to ask questions, open sharing of ideas and opinions, etc.), discussing communication mission and values.
Mapping existing information and material and the needs to produce new ones	-
Defining target groups	Defining key stakeholders and target groups
Defining channels	Define preferred communication channels Define what data is needed for which stakeholders and ways to present the information Data storing practices
Challenges, issues and how to tackle them	
Resources	Mapping resources - group members and their strengths - available materials - tools
	Mapping existing report templates
Schedule and milestones	Schedule for report updates - When? To whom? What inputs are needed? Meetings - When? Who are involved? Who initiates? Channel (face-to-face, online-meeting, telco)? Milestones follow project master plan
Roles, responsibilities and mandates	Roles, responsibilities and mandates
Execution and its steps	
Expected results and means of evaluation	Expected results and means of evaluation
Project follow-up and documentation	Agree communication evaluation methods for example audits, quantitative measures like meeting participation
Quality assurance	

**The third research question was defined as: “How can communication strategy execution be followed up in projects?”**

Communication efficiency in projects has very strong correlation to project success which was indicated in both theoretical framework and found out in the empirical part. Therefore communication follow-up measures can be directly embedded into project KPIs. The results of the study also indicate that companies could improve their project communication by conducting customer satisfaction surveys for the projects’ customers. This research however should be conducted by marketing or communication department in the company.

Simple communication follow-up is counting the number of emails exchanged by project team or the meeting participation rate. One indication of successful communication and team motivation is the participation rate to meetings. But these kinds of follow-up measures only measure the activity of the project team, not the quality of the communication. A better way to follow-up communication quality is for example to have communication audits every once and awhile. The audits can be informal, but better results are received when the assessments are continues and comparable.

Meters are a way to follow up on the progress and effects of the communication plan. Usually a definition of a good evaluation meter for a project or scheme is that good appraisal methods are always unique, relative and contextual. This mean –unfortunate – that the wheel needs to be invented again. Each project should have its own tailored evaluation models. (Jalava & Virtanen, 2000, 112)

It is not always justified to conduct arduous researches of communication success when for instance mere email-queries can find out the answers. Projects themselves can estimate the success of communication within the project, but in case the company marketing and/or communication department is interested in researching project communication with more analytical approach, good tools to be used are:

- Questionnaires: e.g. form questionnaire
- Interviews:
- Electric measurements such as internet or intranet surveys
- Publications content analysis: as an outside assessor the published material can be evaluated concerning its content.
- quick feedback

A customers' satisfaction is formed from the perceived performance of the product/project and the buyer's expectations. Therefore customer satisfaction survey is one way to measure the progress of project communication, especially in subcontracting or business-to-business sector. There is a close connection among product and service quality, customer satisfaction and company profitability.

Assessing project success and project communication efficiency at the end of the project life-cycle is a good reminder and a way to keep the organization learning from its history. Lessons learned database is also a good to have as an archive, but normally it holds the information of a library and people tend to neglect reading everything through. Suggestion is to present the findings and learning when project manager colleagues gather together.

### 5.1 Discussion

Communication isn't rocket science; it is an everyday life tool. In a high technology project environment where movements are fast and showy, the importance of keeping up the pace is essential: meaning that communica-

tion must also be efficient and flexible in order to allow different specialists to work their magic. Communication is the link between modules; if it breaks the results are most probably not what they should be. Taking care of small things like giving proper instructions to everyone despite their high degrees can save someone a lot trouble and act as motivator to input information to be shared.

Communication between projects could solve some problems and help organization to learn, especially when new technologies are involved. Some communication can however be limited with NDAs (non-disclosure agreement) which hinders sharing e.g. technical information.

The project manager of a project will take care of the specific project's operations and success. He/She spends a lot of time communicating with customers and other stakeholders. The communication is bound to reflect the organization culture and project team spirit in some context to the other stakeholders. Companies are wise to utilize these interfaces as marketing opportunities and keep project managers aware of for example latest technological services the company has to offer.

In a project oriented company visual appearance is not normally high on priority, but harmonised look would certainly give a more professional image to the receivers. Preparing document templates, thinking through the project stakeholders' needs of information and enhancing harmonised way of utilising templates, reports, schedules etc. would help the communication in projects.

### 5.2 Suggestions for further study

There are also many different kinds of companies whose core competencies are utilized in project management. This thesis focused primarily on internal communication. External communication and customer interfaces management is an interesting topic. Project oriented companies work alongside with customers and/or consumers, but do they really utilize the marketing and communication opportunities given to them?

There is a huge difference in working as a subcontractor and designing, planning and executing projects for ordering partner or customer than delivering to thousands of consumers. Communication targets, channels and prerequisites are quite different in those companies. This thesis didn't address the differences of communication processes in business-to-business sector compared to companies targeting consumer end-users.

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	<b>Form of co-operation</b>	<b>Length of co-operation</b>	<b>Learning</b>	<b>Scope of co-operation</b>
<b>Resource outsourcing</b>	Transaction	One-time action/ until further notice	Individual level, developing something already existing	Concise
<b>Competence outsourcing</b>	Transaction	Project	Individual- and team level, companies learning mostly separately. Developing something already existing and creating new.	Mediocre
<b>Virtual company</b>	Project	Project/until further notice	Companies learning separately, possibility to learn as a network. Developing something already existing and creating something new.	Within the project area
<b>Network of strategic alliances</b>	Project	Some months/ project	In a community meaning on individual level, organization/network level, mainly focusing to create something new.	Within the project area
<b>Joint venture</b>	Common business activity	Continuous	Interactive learning as organization. Creating something new.	Wide
<b>Alliance</b>	Strategic long-term business activity	Continuous	Interactive learning as organization. Creating something new.	Wide

## Project Management

Taustatiedot:

Yrityksen toimiala  
rooli projektissa

- Kuinka kuvailisit rooliasi viestinnän toteuttajana?
- Kuinka mielestäsi projektiviestintä onnituu parhaiten? Milloin epäonnistuu?
- Mitkä mielestäsi ovat projektiviestinnän erityispiirteitä/erityishaasteita?
- Oletko tietoinen yrityksen yleisestä kommunikaatiostrategiasta?
- Kuinka projekti voi(si) toteuttaa tätä yrityksen kommunikaatiostrategiaa?
- Kuinka tätä kommunikaatiostrategian toteutusta voitaisiin parantaa?
- Onko projektissa jossa työskentelet oma kommunikaatiostrategia tai- suunnitelma?
- Onko yrityksen yleinen kommunikaatiostrategia otettu huomioon projektin viestintästrategiaa suunniteltaessa?
- Millainen viestintästrategia mielestäsi toimii parhaiten projektissa?
- Mitkä ovat projektin viestintästrategian kohderyhmät? Kuinka niiden tarpeet otetaan huomioon viestinnässä?
- Mitkä ovat projektin sisäisiä sidosryhmiä?
- Kuinka projektissa suunnitellaan viestintä: alihankkijoille, asiakkaille, yrityksen johdolle?
- Kuinka projektissa jossa toimit hallitaan informaation, tietämyksen ja viisauksien maksimaalinen hyödyntäminen myös yrityksen muissa toimissa? vrt. lessons learned ja viittaus tietämyksenhallintaan: Tietämyksenhallinta= knowledge management, voidaan kuvata toiminnan organisoimiseksi ja parantamiseksi niin, että organisaation toimintojen laatu maksimoituu tiedon käytön avulla.
- Seurataanko projektiviestintää systemaattisesti?
- Millä keinoin projektiviestintää voidaan mitata?

**Project Management**

Background information:

Company industry:

Role in project:

- How would you describe your role in project communication?
- When is project communication most efficient? When does it fail?
- What do you think are the special features/challenges of project communication compared to other type of organization communication?
- Are you aware of the company level communication strategy in the company you work for?
- How can/could projects better follow this company level communication strategy in their operations?
- Does the project you are working in have its own communication strategy?
- Does the project communication plan comply with the company communication strategy?
- What type of communication & communication strategy is best suited for projects?
- What are the project communication stakeholders? How are their different needs satisfied in communication?
- How can the information in projects best be transferred to be utilized in other projects and in the company in general?
- Is project communication systematically followed up? What is the best way to measure its success?



**PRINCETON PROJECT METHODOLOGY -- PROJECT COMMUNICATION PLAN (rev. 10/03/03)**

A well planned project has a well planned Communication strategy. The following are guidelines and options when creating a Project Communication Plan.

What	Who/Target	Purpose	When/Frequency	Type/Method(s)
Initiation Meeting	All stakeholders*	Gather information for Initiation Plan	FIRST Before Project Start Date	Meeting
Distribute Project Initiation Plan	All stakeholders*	Distribute Plan to alert stakeholders of project scope and to gain buy in.	Before Kick Off Meeting Before Project Start Date	Document distributed via hardcopy or electronically. May be posted on project website or OIT Blackboard site. <b>PPM Templates:</b> Project Snapshot or "Lite" Initiation Plan
Project Kick Off	All stakeholders*	Communicate plans and stakeholder roles/responsibilities. Encourage communication among stakeholders.	At or near Project Start Date	Meeting
Status Reports	All stakeholders and Project Office	Update stakeholders on progress of the project.	Regularly Scheduled. Monthly is recommended for large/midsize projects.	Distribute electronically and post via web/OIT Blackboard site. <b>PPM Template:</b> Status Report
Team Meetings	Entire Project Team. Individual meetings for sub-teams, technical team, and Functional teams as appropriate.	To review detailed plans (tasks, assignments, and action items).	Regularly Scheduled. Weekly is recommended for entire team. Weekly or bi-weekly for sub-teams as appropriate.	Meeting <b>PPM Template:</b> Detailed Plan
Project Advisory Group Meetings (this may apply only to larger projects)	Project Advisory Group and Project Manager	Update Project Advisory Group on status and discuss critical issues. Work through issues and change requests here before escalating to the Sponsor(s).	Regularly Scheduled. Monthly is recommended.	Meeting
Sponsor Meetings	Sponsor(s) and Project Manager	Update Sponsor(s) on status and discuss critical issues. Seek approval for changes to Project Plan.	Regularly scheduled Recommended biweekly or monthly and also as needed when issues cannot be resolved or changes need to be made to Project Plan.	Meeting
Executive Sponsor Meetings (this may apply only to larger projects)	Executive Sponsor(s) and Project Manager	Update Sponsor(s) on status and discuss critical issues. Seek approval for changes to Project Plan.	Not regularly scheduled. As needed when issues cannot be resolved or changes need to be made to Project Plan.	Meeting

Appendix 4

EXAMPLE OF A PROJECT COMMUNICATION PLAN

## Communication Strategy in Projects – High Technology Sector Viewpoint

What	Who/Target	Purpose	When/Frequency	Type/Method(s)
PPO Audit/Review	Project Office, Project Manager, select stakeholders, and possibly Sponsor(s) if necessary.	Review status reports, issues, and risks. To identify and communicate potential risks and issues that may effect the schedule, budget, or deliverables.	Monthly Scheduled by the Project Office	Meeting/Report Project Office will produce report using their template.
Post Project Review	Project Office, Project Manager, key stakeholders, and sponsor(s).	Identify improvement plans, lessons learned, what worked and what could have gone better. Review accomplishments.	End of Project or end of major phase	Meeting/Report Project Office will produce report.
Quarterly Project Review	Project Office, Project Manager, and key stakeholders.	Review overall health of the project and highlight areas that need action.	Quarterly depending on size and criticality of the project. Scheduled by the Project Office.	Meeting/Report Project Office will produce report using internal template.
Presentations to Special Interest Groups	Examples: PMT (Project Managers Team), OIT Leadership Group, AIS Quarterly Review, AMG (Academic Managers Group), etc.	To update external groups to promote communication a create awareness of project interdependencies.	At project milestones so as to communicate with other interested parties of changes that will be introduced outside of the Project Team.	Presentation/Demonstration
OIT Blackboard Site	ALL OIT and OIT Project Team Members.	Central location to house Status Reports, meeting minutes, Project description, and Project Plan. For any communications that can be shared with all OIT staff.	Update monthly with Status Reports; otherwise, as necessary.	Electronic Communications Venue
Periodic Demos and Target Presentations	Specific Focus Groups or End Users. Examples: AMG (Academic Managers Group), Students, Power Users, Help Desk, Dept Mgrs., etc.	To gain input from special groups and keep them abreast of the Project's status.	Once product has enough to "show". As you complete critical phases or make major enhancements.	Presentation/Discussion
Other...	To be determined by the Project Team	General communications	As needed	PAW, PWB, Lunch n Learns, email lists, PU home page announcements, etc.

<sup>8</sup>Princeton Project Methodology (PPM) describes stakeholders as: "...any person or group who has a vested interest in the success of the project, i.e. either provides services to the project, or receives services from the project. A *key stakeholder* is defined as: *A person whose support is critical to the project – if the support of a key stakeholder were to be withdrawn, the project would fail.*"