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**STAKEHOLDERS' COMPETENCE EXPECTATIONS FOR RDSS  
ORGANIZATION**

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## **GLOSSARY**

### **Abbreviation**

### **Full text**

HR

Human Resources

INS

Indirect sourcing

IT

Information technology

L&IP

Legal and intellectual property

R&D

Research and development

RDSS

Research and development subcontracting sourcing

## ABSTRACT

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The objective of the thesis was to study what are stakeholders competence expectations for research and development subcontracting sourcing (RDSS) organization at Nokia Mobile Solutions. Based on the results of the research, are there areas which should be developed? Stakeholders are five R&D employees in Nokia Mobile Solutions organization.

A qualitative research in the form of open interviews and observations was conducted including theoretical information from literature and other sources. There was no pre-defined questionnaire made for the interviews but the relevant similarities and differences were sought and taken into account in the results. Five employees from R&D organization were interviewed and observations were made in three business meetings to gather empirical data. Inductive analysis method for data was used meaning theoretical entity is created based on research data group.

According to results subcontracting manager's role as a representative of RDSS organization was seen important and necessary but somewhat passive. Delays in requests for resource allocations for RDSS cause late deliveries in R&D projects. As a result subcontracting manager should participate more actively in business meetings to have better insight into resource requirements in the near future. RDSS proactive attitude towards stakeholders was emphasized. Subcontracting manager should have a stronger and more visible role in surveying and approving new, agile subcontractors, even those who are not in the field of electronics. Information should actively be pushed to R&D to be able to exploit unutilized potential.

R&D stakeholders expect RDSS keep up the contract management skills with L&IP training. Agreements should be clear and unambiguous defining what has been agreed in practice. This way the co-operation is considered satisfactory and stakeholders may focus on their core competences.

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Keywords: networking, agile workplace, subcontracting, partnership, qualitative research

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# 1 INTRODUCTION

Nothing but change is constant in today's business. Strategies are not static, including those aimed at capitalizing external product-development resources. Firms should continuously assess their core development tasks and seek external sources or resources and readily available technology. (Hätönen 2008, 212.)

Agile workplace, industrial co-operation in terms of networking and partnership are explained as part of the thesis framework. Agility is the ability to respond quickly and effectively to quick change and high uncertainty. The agility is achieved through workplace and work co-evolution. Once achieved, workday activities are altered with minimum friction and delay. Scrum is one of many agile approaches emphasizing teamwork and the ability to respond quickly to a change. Rather than a full process or a methodology, it is a framework. Much is left up to the development team to complete detailed descriptions of how everything is to be done on the project.

Business and competition are going more and more global. Bilateral co-operation in business changing to strategic networks originated mainly from supplier - client relationships. Japanese assembly industry from 1970's has been the pioneer in building productional networks. The co-operation between organizations has become more essential success factor in business which is changing more complex. The product lifecycles are shortening and quick information sharing enabled by information technology development have strongly effected on structures and competitions of the lines of businesses. Business going international forced companies search for new market areas by strategic alliances. While business is changing more complex it drives for breaking old network models. Different kinds of networks give different kinds of benefits like cost efficiency, high and smooth quality, combine new products and technologies and create completely new businesses. Future belongs to network "knitters".

The objective of the thesis is to study what are stakeholders' competence expectations for research and development subcontracting sourcing (RDSS) organization in the target

company. Based on the results of the research, what are the areas which should be developed? The interest towards the thesis topic arose from researcher's own work experience in RDSS organization in the target company. The researcher was acting as a subcontracting manager in RDSS working closely with the R&D stakeholders. The research methods chosen for this qualitative research are open interview, observation and an e-mail questionnaire.

Firstly, four R&D employees from Nokia Mobile Solutions organization pondered over the research questions in face to face interviews which are the backbone of this thesis. One e-mail questionnaire was sent to an interviewee. In addition to interviews the researcher made observations in three business meetings to gain more empirical data for the research.

Secondly, subcontracting and RDSS organization in the target company will be introduced. According to Lehtinen (2001, 32-35), subcontracting has had different meanings depending on industrial history and evolution. When enterprises make complex products involving many different processes or when demand is too high or the products too specialized, they have the choice of doing the work themselves or getting others to do it for them. If they buy in specially made rather than standard products, this is known as subcontracting.

Finally, as a result of the research the areas that need developing are defined. One of the corner stones the research leans in the research is the theoretical information in the observations. The results of the research are affected by how the person understands the phenomenon, what meanings the phenomenon is given and what kind of tools are used. (Tuomi and Sarajärvi 2006, 19).

## 2 AGILE WORKPLACE

The workplace has always been defined by the synergistic relationship between technology and people. As technology has evolved, so has the workplace – from the industrial revolution to the information age. In the transition from an industrial age to information age, new works styles and locations are emphasizing the changes being experienced in the workplace today giving rise to a better connected, more competitive and increasingly complex work environment.

([http://www.johnsoncontrols.com/publish/us/en/products/building\\_efficiency/gws/gwi/projects\\_workplace\\_innovation/futures\\_workplace\\_innovation/workplace\\_futures\\_workshop\\_innovation\\_FM\\_RE.html](http://www.johnsoncontrols.com/publish/us/en/products/building_efficiency/gws/gwi/projects_workplace_innovation/futures_workplace_innovation/workplace_futures_workshop_innovation_FM_RE.html) , date of retrieval 16.10.2011.)

Rapid and dynamic change essentially turns enterprises accustomed to structure and routine into organizations that must improvise solutions quickly, correctly and with grace. The bigger the complexity and the more unpredictable the situations, the greater the workers' dependence on tacit knowledge, creativity and innovative solutions. (Gartner et al. 2001, 11.) Tacit knowledge means silent knowledge gained by many years of personal work experience and trust between partners.

Today's organizations are making concerted efforts to align their workplaces and the work that takes place within them. Physical aspects of these workplaces are being deliberately altered to match the work. The alignment of space and work has become mainstream practice nowadays. Agility is the ability to respond quickly and effectively to rapid change and high uncertainty. In the context of the workplace the agility is achieved through the co-evolution of the workplace and the work. That co-evolution is only possible when the work is clearly understood. Work must be understood in its particulars, not merely by function or job classification. Once agility is achieved, the organization has the ability to alter workday activities with a minimum of friction and delay. The work methods are always adapted to the workplace environment. Because the change and uncertainty are always with us, agility is a constant objective – a moving target. Building a continuous improvement into work is an important part of the solution. (Gartner et al. 2001, 20.)



Sydänmaanlakka (2006, 191), explains the same phenomena by saying that the rhythm of the business has changed. The critical success factors of the organizations are fastness, flexibility, integration and innovativeness. Best succeed the companies that accept the uncertainty of the change and converts it to their success stories. These companies actively utilize the change and exploit the opportunities that come along.

Scrum is one of many agile approaches emphasizing teamwork and the ability to respond quickly to change. Rather than a full process or a methodology, it is a framework. Instead of providing complete, detailed descriptions of how everything is to be done on the project, much is left up to the development team. This is done because the team will know best how to solve the problem they are facing. Scrum relies on a self-organizing, cross-functional team. There is not a responsible team leader who decides which person will do which task or how a problem will be solved but those are issues that are decided by the team as a whole. The team is cross-functional so that everyone necessary to take a feature from idea to implementation is involved. (<http://www.mountangoatsoftware.com/topics/new-to-agile-or-scrum>, date of retrieval 09.05.2011.) In the next chapter the agile target company is presented as of July 2011.

## **2.1 Company presentation**

The target company in this thesis is Nokia, second largest company in mobile communications, driving the growth and sustainability of the broader mobility industry. The organizational structure is designed to position Nokia for a world where the mobile device, the Internet and the computer are fusing together. From July 1, 2010 Nokia has three main units: Mobile Solutions, Mobile Phones and Markets. The latest organization change is under process due to Nokia strategy change in March 2011.

*Mobile Solutions* is responsible for developing and managing the portfolio of smart phones and mobile computers. The team is also busy developing a world-class suite of internet services under the Ovi brand, with a strong focus on maps and navigation, music, messaging and media. *Mobile Phones* is responsible for developing and managing our

portfolio of affordable mobile phones, as well as a range of services that people can access with them. *Markets* manages supply chains, sales channels, brand and marketing activities, and is responsible for delivering our mobile solutions and mobile phones to the market.

*Nokia Siemens Networks*, jointly owned by Nokia and Siemens, provides wireless and fixed network infrastructure, communications and networks service platforms, as well as professional services to operators and service providers.

*NAVTEQ* is a leading provider of comprehensive digital map data and related location-based content and services for automotive navigation systems, mobile navigation devices, Internet-based mapping applications, and government and business solutions.

business solutions. ( <http://www.nokia.com/about-nokia/company/structure>, date of retrieval 09.01.2011.)

### **3 INDUSTRIAL CO-OPERATION**

Business and competition are going more and more global. Companies' operational collaboration that originated from subcontracting in 1970's has increased and diversified radically during last decades. The product lifecycles are shortening and quick information sharing enabled by information technology development have strongly effected on structures and competitions of the lines of businesses. These changes together with increased research and development costs, expanded range of products and services like auxiliary-, after care, maintenance- and finance services have forced the companies to focus on their core development tasks, as Hätönen (2008, 212) earlier stated. (Möller et al. 2004, 17.)

The co-operation between organizations has become more essential success factor in business. Co-operation between organizations has a long history. Networks, subcontracting and partnership are some models of co-operation. (Engeström 2004, 1.) Their characteristics and theories are explained in chapters 3.1 – 3.3 Target organization, research and development subcontracting sourcing is introduced in chapter 3.4.

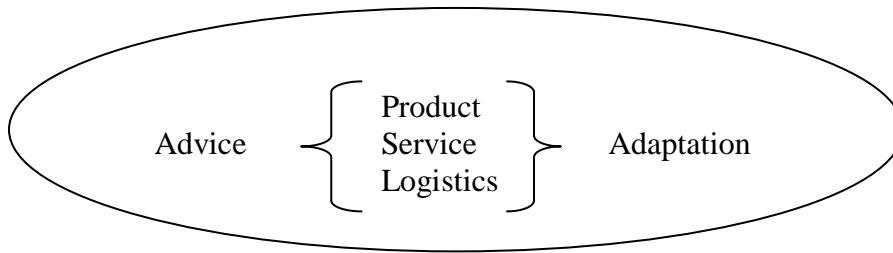
#### **3.1 Network models**

How to recognize and develop efficient forms of economy have been the central questions among business researches for long. Bilateral co-operation in business changing to strategic networks originated mainly from supplier - client relationships. Japanese assembly industry from 1970's has been the pioneer in building productional networks. Trade going international forced companies search for new market areas by strategic alliances. An understanding about three basic models for economic activities in terms of communication and co-operation were born: market-based business relations, ownership based business called hierarchy and network business relations. Möller et al. refers to Bradach & Eccles 1989, Jarillo 1993, Powell 1990, Vesalainen 2002 when they say that these models each have their own pros and cons. Market-based relations are efficient when it comes to standard products with plane quality. The competition forces suppliers to aim for extreme

cost efficiency which depresses prices. Searching suppliers, evaluation, and bidding on the other hand create expenses. This can be avoided in a hierarchic, ownership based model where a company owns the production chain from raw material up to manufacturing ready made products. It is efficient when the company is able to refine the raw material cheaper than the specialized companies. The competition and quick technological development has on the other hand created cost efficient, specialized suppliers. Network business relations have taken over market-based and hierarchies' models avoiding their disadvantages mentioned above. (Möller et al. 2004, 15, 16, 17, 22.)

Business is changing more complex. The *business complexity* drives for breaking old network models. According to Rajala (2010, 20) drivers for the change from bilateral to network models are *company concentrating on its own core competences, business globalization* and *the speed of technology development*. Development requires ability to combine many different technologies of many companies in research and development sectors and customership managements. Technological and marketing knowhow and communal knowledge are scattered in specialized companies thus creating need for networking and companies' co-operation. (Möller et al. 2004, 19).

Products and services are more systemic because of customers' demands and influences. *Value operation* means all the actions to manufacture a product or service according to the customer's needs. Product/service concept means that the client buys not only a product but an introduction service or system that comes along. As an example of product/service concept when buying a computer, the customer gets the attached software, introduction adaptation and service desk support with the product. Elements of product/service concept are illustrated in figure 1.



*FIGURE 1. Elements of product/service concept (Rajala\_Verkostot\_ja\_arvonluonti, 2010,6)*

As mentioned earlier research and development costs are increasing due to quick development change in technology. This makes companies to focus on their core technologies giving growth prospects to technology specialists. Increasing amount of specialized companies build dependency between them and integrate knowhow. Specialized development like this drives companies networking for its part. Increasing product-, logistic- and other development costs force companies to constantly pay attention to cost efficiency. The customership is getting larger by new market areas which again mean business going global. It compels companies to network by building strategic networks. (Möller et al. 19.) They are also called value networks, mentioned in more detail in chapter business networks. The terminology within networking is under developed and colored; same items are discussed with different terms and different items with the same terms.(Möller et al. 27.)

In the next chapter elements of network are defined according to ARA- network model.

### 3.1.1 Elements of network

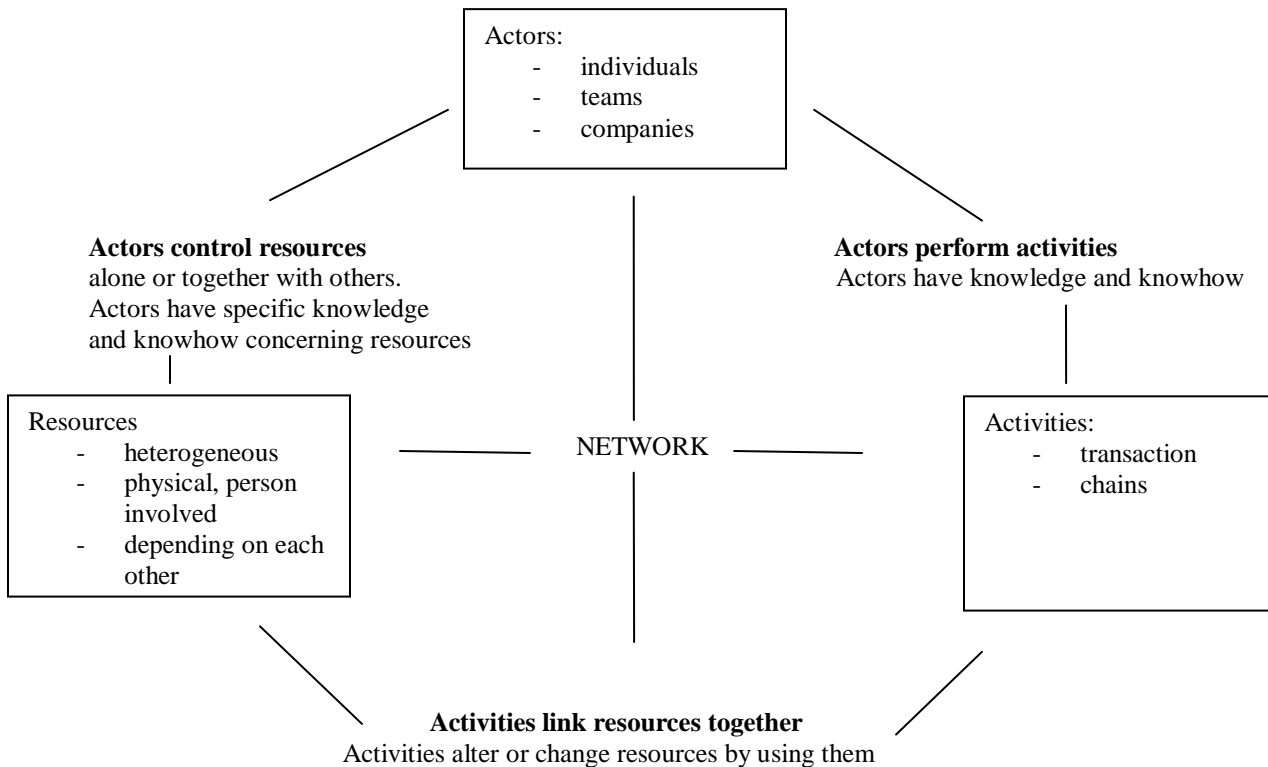


FIGURE 2. ARA network model (adapted from Rajala 2010, 9)

ARA network is built on the three layers of substance in relationship in networks: activities, resources and actors. Actors may be firms or individuals as well as organizations in a company. They could also be governmental bodies and other stakeholders. Actors carry out activities of various kinds (production, distribution, communication) to create added value to the network. In doing so, they need to have access to resources such as knowledge, production equipment and energy. Ongoing operations lead to the creation of connections between activities among several actors, thus causing activity networks to emerge. The existence of activity networks makes it possible to connect activities and thus causes more activities to emerge. Ongoing operations call for the mobilization of resources, thus causing related resource networks to emerge. It is, again, true that the resource layer is an important context for new resources. The performing of activities and mobilization of resources involves actors of various kinds, thus causing networks of actors to emerge. These networks (activity, resource and actor networks) are more or less overlapping and

connected. (Axelsson, B. Business Relationships and Networks: Reflections on the IMP tradition. The IMP journal. Stockholm School of Economics 104 (4), 13.)

In the next chapter the business networks are explained.

### **3.1.2. Business networks**

Business network is actually a net organization consisting of a group of companies. They consist of minimum three companies, network is built on a certain purpose and is objective driven. An agreement is signed by both parties identifying the roles and responsibilities of the net members. The network activities are driven by defined goals each member having his own targets. The networks have strategic value to their members so business networks are also called *strategic-* or *value networks*. (Rajala 2010, 36; Möller et al. 2004, 29.)

Running business involves companies in many different kinds of networks. They can be classified in many ways depending on which criteria is emphasized. One common classification is based on positioning of networks, when local, regional or global networks are considered. This aspect is useful when the width of network and potential members are evaluated. Theoretically popular way is classifying networks in a vertical or horizontal way, vertical networks being most common representing supplier network based on supply – demand value chain. Horizontal networks seek for competitive advantage by combining resources to build larger product/service concept and to gain more and bigger sales orders.

Multidimensional nets include both vertical and horizontal networks, internet being an example of them. (Möller et al. 2004, 30, 32.) Internet has become a common mode of communication in the whole western society. It has joined people together all over the world by information- and contact networks. People can connect with each other according to their interests in spite of their geographical areas. This is unique situation in man's history thus networking has become the most important mode of society organization. (Stähle et Laento 2000, 24, 25.)

As said above, business companies are linked in many networks. Different kinds of business networks require different kinds of organizations. Question arises how can the networks be differentiated and what are their benefits? Thinking about the target company, which networks characteristics can be found?

In the next chapter basic-, innovative- and nascent business networks are presented and reflected in terms of the target company.

### *Basic business network*

Basic business network is built on well-known and specified technologies. As earlier said, a business network has a certain purpose and is objective driven. Most of the basic networks are built on step by step improvements by developing just on time (JOT) deliveries for example delivering components to the company's production lines. While development goes on an integrative company takes over and delivers integrated services in the value creation. Companies like Elcoteq in electronics field offered outsourcing services for Nokia in the area of logistics, research and development and design. (Möller et al. 2004, 29, 41, 42, 43, 44.)

The customer interface is vitally important. The sooner the company is able to anticipate customers' changing needs in buying and consuming habits, the better product/service concept it is able to develop. The trend is heading towards wider demand-delivery network in business line's value creation system. Nokia Mobile Phones among others expanded the supplier network towards demand-delivery network to better manage value creation from supplier to the final customer. (Möller et al. 2004, 44.)

Globalization and technology development effect in all business lines and competition in general. A company itself may not be the direct target, but is affected indirectly by other competitors, suppliers and customers. Basic business network built as a tight value network is one answer to the demands of globalization. In a long run a basic business network is not efficient enough but needs renewal and development to improve company's market



position and competitiveness. Innovative network, presented below, is needed for this kind of development work.(Möller et al. 2004, 80.)

### *Innovative business network*

As earlier stated, companies concentrate more and more in their own core businesses. Networking between companies is yet needed to overcome competence gaps and obstacles by building product/service concept for customers. Combining knowledge and innovative information is in the focus.(Möller et al. 2004, 88.)

What makes a network innovative? An innovation is either technical like a product or a process or social like a business line model. Two characteristics; usability and exploitation are essential features in both of them. (Möller et al. 2004, 89.)

Third characteristic of an innovative network is it's nature of development projects. In the target company the R&D organization is characterized by clearly defined targets, tight schedules and deadlines. RDSS role is to support the R&D organization in finding the most suitable resources for a given project. Research and development subcontracting sourcing organization in the target company is introduced in chapter 3.4.

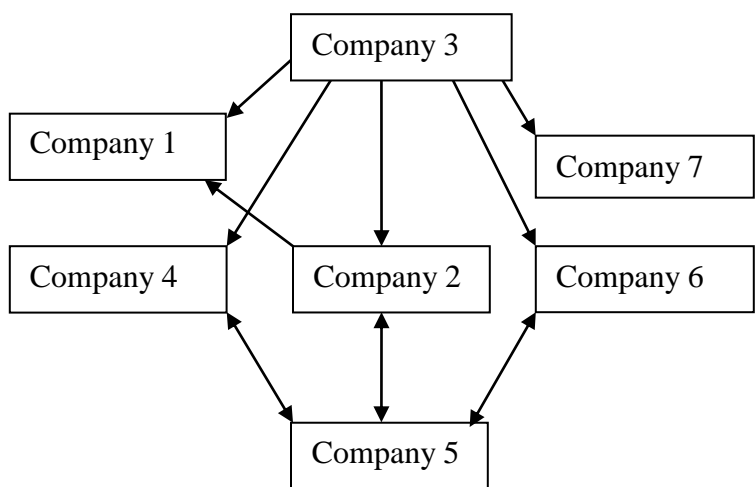
Core companies may be part in many different kinds of innovative networks, so widely thinking they can combine local and regional knowhow or create strategic alliances with competitors and development partners. Trust, openness, good level of communication and efficient information management system are basis of successful networking. (Möller et al. 2004, 79, 80.)

Innovative networks built around research and development projects are strongly heading at better products and more developed technology. In doing so, companies combine resources and knowhow by thus avoiding expensive investments in their own organizations.

### *Nascent business network*

Many technology- and innovation researchers say we live a technological revolution time. Quick development of information technology has a strong effect on the business opportunities. Fast growth and development of information technology, convergences of business lines and technologies, decreasing importance of distances and increasing importance of time in terms of delivering new information globally through internet are characteristics of this revolution era. These trends have changed the competition global and at the same time engage economical doers together. Competition forces companies to focus on their core competences and increase collaboration between them. (Möller et al. 2004, 119.)

When companies lean on each others' core competences their bindings become more and more multiform and interactive. The network is non-transparent and virtual meaning companies cannot "see" the network bindings with great subtlety as illustrated in figure 3. Globalization and networking creates thus complexity and uncertainty and makes it more invisible. The network consists of invisible relationships and the more bilateral relationships there are the stronger they grow. The relationships are of vital importance to network because they act as information channels which transmit, cumulate and enrich the information. (Möller et al. 2004, 18, 119.)



*FIGURE 3. Network relationships (adapted from Engeström 2004, 4)*

The network creates opportunities in terms of flexibility, agility and new innovations. The winners in technology revolution are those companies who are able to harness new technology in developing new business opportunities. At Nokia for example short text message service (SMS) becoming a success story among youngsters came as a surprise for designers. Originally it was anticipated that the service would be used by professionals like maintenance- and company representatives. (Ståhle and Laento 2000, 121; Möller et al. 2004, 120.)

Different kinds of networks give different kinds of benefits like cost efficiency, high and smooth quality, shorter delivery times, combine new products and technologies and create completely new businesses. Different networks will definitely have a strong role in building the future development. Networking has several features which makes it challenging and difficult to manage from business and research point of views'. A whole business line like IT business is connected with smaller, strategic value networks like Nokia's supplier network. These two are connected in a natural way by company partnerships which are basic units for business networks. The whole network economy is formed by these kinds of partnerships and networks. (Möller et al. 2004, 3, 7.) The partnership characteristics are defined in the following chapter.

### **3.2 Partnership**

As Möller et al. (2004, 120) earlier stated, convergences of business lines and technologies create new business opportunities. As a result of convergences new products and services are created.

The network, which is merely a possibility, may turn into economical value only through partnership. It is the most efficient way of operating in the network economy. The competition and development in business are so severe today that no company alone can dominate the markets even with the best research and development works. The nature of partnership changes according to targets that are aimed by partnership – either to expand the core business or create new markets. (Ståhle and Laento 2000, 25, 26, 40, 76, 81.)

The core element of partnership is visible in a traditional buy – sell action where exchange takes place: goods and money are exchanged and both sides benefit from it. The buyer gives money, the seller hands over the goods. The happier both parties are, the more often the exchange takes place thus creating customership based on confidentiality. The basic element in a partnership is a relationship – invisible link – between partners. Even though partnership is between parties, it is the people that build it. (Ståhle and Laento 2000, 54, 78).

According to Engeström (2004, 4) partnership is a long-lasting co-working model managing the important strategic challenge of the partners' organizations. The challenge might be, for example, a new challenging group of products or a market area. Features like co-work without time limits, wide, multidimensional challenges are some of the characteristics of the partnership described in the figure 4.



*FIGURE 4. Partnership (adapted from Engeström 2004, 5)*

Partners need joint strategic visions and milestones to follow up the achievements. The partnership is about equal partners having competences and resources fulfilling each other's gaps. It is not about building hierarchy or a partner's power over the other but going over the boundaries together. All things considered it can be said that partnership is a difficult model and adopting takes a long time and effort. Partners are responsible for developing the operations and need feedback to modify and correct operation modes. Partnership requires new, proactive agreements to define the roles and responsibilities of the parties. Agreements also include commitments which protect the interests of the parties. (Engeström, 2004, 5,6.)

### **3.3 Subcontracting**

Subcontracting is seen as an efficient tool for achieving success in the current globalized competition. As earlier said, companies should concentrate in developing their core competences and seek for external sources or resources and readily available technology. Companies should take a more strategic approach towards subcontracting rather than just cover temporary resource gaps in a short term, and continuously assess the possibilities capitalizing subcontracting.

In her doctoral thesis Ms. Ulla Lehtinen (2001, 32-35), explains that subcontracting has had different meanings depending on industrial history and evolution. According to EU (1997):

When enterprises make complex products involving many different processes or when demand is too high or the products too specialized, they have the choice of doing the work themselves or getting others to do it for them. If they buy in specially made rather than standard products, this is known as subcontracting.

The dictionary of purchasing and supply management (Compton & Jessop 1989) defined the subcontracts as follows:

Arrangements whereby a main contractor (or supplier) authorizes a second (or more) to undertake part of the order he has secured or subcontract for supplies outside the purchaser's own production or because his production is overloaded.

In the Finnish language subcontracting (*alihankinta*) is a commonly used term meaning that goods or services are not made by one, but outsourced from other parties. The subcontractor is a company or independent organization that is responsible for offering subcontracting and related functions to other actors of the chain on a long term basis.

According to Engeström (2004, 1) the main company buys a part of the product or a component from the smaller subcontractor. The subcontractor produces a small restricted part of the end product according to quality and price targets and is usually not aware of the product as a whole. Research and development work is excluded from subcontractor's responsibilities.

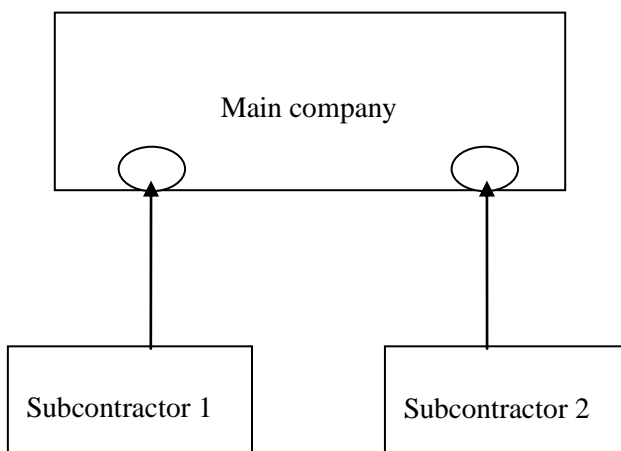


FIGURE 5. Subcontracting (adapted from Engeström 2004, 1)

In the next chapter the target organization is presented.

### **3.4 Research and development subcontracting sourcing organization in the target company**

Nokia sourcing is divided into direct sourcing and indirect sourcing (INS). Indirect Sourcing is globally responsible of sourcing and purchasing of non-production i.e. indirect resources and items, including consultation, IT hardware and test equipment. Direct Sourcing is globally responsible for sourcing and purchasing of R&D production related resources & materials.

Research and development subcontracting sourcing (RDSS) is part of direct sourcing. RDSS is globally supporting Nokia's R&D organizations by making external R&D resources available at the right time, with competitive commercial terms and minimum risks. RDSS supports the R&D organization in finding the most suitable subcontractor for a given project or activity and makes the necessary case-specific agreements with the subcontractor according to total cost efficiency.

As earlier said, the researcher was acting as a subcontracting manager in the research and development subcontracting sourcing (RDSS) -organization..

In this chapter the subcontracting manager's job description as part of the RDSS organization is defined.

The subcontracting manager is responsible for supporting the R&D organization in finding the most suitable subcontractor for a given project and making the necessary case-specific agreements with the subcontractor in terms of quality, availability, risk and performance. The subcontracting manager also has accountability for subcontracting project agreements according to total cost efficiency. Another way to define subcontracting manager's responsibilities is to create value for R&D through providing expertise in subcontracting negotiations and adaption processes. (All\_sourcing\_1h08\_final\_intra\_V07.ppt.)

## **4 RESEARCH METHOD AND DATA COLLECTION METHOD**

The research methods are usually either qualitative or quantitative in nature. Qualitative research is most often described in contrast to quantitative research, which dominates the body of scientific work undertaken in social sciences, including business research. Many qualitative approaches are concerned with interpretation and understanding, whereas many quantitative approaches deal with explanation, testing of hypothesis and its analysis are sensitive to the context aiming at holistic understanding of the issues studied. Quantitative research is more prone to structured, standardized and abstracted modes of collecting and analyzing empirical data. (Eriksson & Kovalainen 2008, 4-5.)

Qualitative research is particularly relevant when prior insights about a phenomenon under scrutiny are modest, implying that qualitative research tends to be exploratory and flexible because of ‘unstructured’ problems. One of the cornerstones the qualitative research leans on in the research is the theoretical information in the observations. As earlier stated the results of the research are affected by how the researcher understands the phenomenon, what meanings the phenomenon is given and what kind of tools are used. (Tuomi and Sarajärvi 2006, 19.) Silverman, (1999, 31) refers to Kirk and Miller (1986, 10) when he says that qualitative research is an empirical, socially located phenomenon, defined by its own history, not simply a residual grab-bag comprising all things that are not quantitative.

### **4.1 Data collection methods**

Data collection methods chosen for this research are observation, qualitative interview and one predefined e-mail questionnaire.

Most business researchers collect empirical data for their research projects and use various types of data collection methods for this purpose. (Kovalainen 2008, 77). The empirical data collected by researcher herself is called *primary data*.



#### **4.1.1 Observation as part of empirical data**

Observation is a method of collecting empirical data by human, mechanical, electrical or electronic means. The researcher may or may not have direct contact with the people who are being observed. According to Eriksson & Kovalainen (2008,87), observation methods can be named through participant or non-participant observation, depending on whether the researcher is part of the situation they are studying or not. A non-participant or direct observer does not try to become a participant in the culture studied; instead she tries to become as unobtrusive as possible.

A participant observation typically requires weeks, months or years of intensive work because the researcher needs to become accepted as part of the culture in order to assure that the observations are of the natural phenomenon observed. Participant observation is one of the most demanding ways of collecting empirical materials and is widely used in ethnographic research. It requires that the researchers become a participant in the culture or context being observed. The main aim is to observe how people interact with each other and their environment to understand their culture.

Each business profession, and sometimes even the organization, has its own language, a jargon, which may be both formal and informal. English is the official language at the target company. This has produced a professional jargon, which is a mix of Finnish everyday language and specialist concepts and abbreviations in English. Knowing jargon enhances stakeholders and researcher's ability in this research to understand what is going on and said. (Eriksson & Kovalainen 2008, 86, 87, 88, 138.)

Based on years of experience and close co-operation with R&D engineers in terms of project planning, decision making and budgeting among other things, the researcher chose the participant observation method to be used in this research.

The researcher participated three meetings during November in 2010, February and June in 2011 made notes. The roles in the meetings varied from the chairman in the meeting to the RDSS representative.

One distinct advantage of making observations is that it records action as it takes place, which is different from people describing afterwards what they said or did. On the other hand, observation does not provide insights into what a person thinks about the action or what might motivate it. (Eriksson & Kovalainen, 2008, 88).

In the next chapter three meetings are described to illustrate making observations.

#### **4.1.2 Meeting 4<sup>th</sup> of November 2010**

The supplier X initiated the meeting by sending an e-mail inquiry to the researcher and her colleague. The meeting was held at supplier X's meeting room at Technology Village in Oulu. The researcher's main task was observing supplier's representatives in their own environment, gathering data in naturally occurred situations and understanding actions and meanings in their social contexts. On the agenda there was the plan of future business mode between the parties in a round table conference. The hosts had prepared well for the meeting. The agenda was introduced to participants, accepted and was followed step by step during the meeting. Three hours time slot from 9. to 12 am. reserved for the meeting was fully used without any breaks. The researcher has a dual role in the meeting; to participate in the meeting and make observations as a researcher at the same.

The researcher and her colleague were sitting on the other side of the table facing the supplier's representatives on the other. Supplier showed them the presentation slides by data computer and asked their opinions about the context and the layout of the presentation. The atmosphere was positive, which is a result of long established, reliable business relationship between partners, and a lively discussion followed. The meeting ended up on a mutual decision making. It was also agreed that the follow-up meeting would be arranged within 3 months to review the current situation.

Finally the supplier wrapped up the results of the meeting. It was considered successful, but not surprising, though, in terms of decision making, level of commitment and future prospects to deepen the co-operation.

#### **4.1.3 Meeting 10<sup>th</sup> of February 2011**

The trilateral meeting was arranged by sourcing representatives' request. The request was sent by e-mail and approved by every participant. The other participants of the meeting are five R&D designers from Nokia and two salesmen from company Y in China. The Chinese salesmen are dressed in pinstripe suits and shiny shoes.

The meeting was agreed to start at 1 pm. At that time only salesmen and sourcing people were present at the meeting room, supplier's salesmen sitting on one side of the rectangular table, the sourcing people on the other. Business cards were exchanged according to Chinese business etiquette: holding the business card in both hands when offering or receiving one. While waiting the R&D designers to attend the meeting it would have been nice to have a cup of coffee, but unfortunately the chairman forgot to make a coffee service request.

R&D designers enter the meeting room one by one and choose to sit at the other end of the table. All the designers, wearing jeans and sweaters, shake hands with the supplier's representatives but none of them apologize for being late. The Chinese prefer arriving on time at meetings and view punctuality as a virtue. Arriving late is an insult and could affect negatively on business relationship. Even though the meeting starts fifteen minutes late, nobody comments on the late beginning. An important Chinese virtue is having face in front of one's business colleagues or within a community. It is literally a statement of that person's value. People with good face are generally dependable, reliable, and safe to do business with. First the supplier starts the power point presentation that is detailed and factual. An organization structure is clarified including a cross communication evidence. An interesting detail in the presentation is the communication matrix that supplier will utilize for exchanging information between supplier and Nokia team. It means that every e-

mail will be sent to the team leader instead of direct contact to the designer. Next the team leader will contact the designer and sends response to the Nokia team member. The reason for this is that not everyone has fluent English speaking or writing skills in the Chinese company. In Chinese management culture everyone has a social rank, and all are expected to know where they fit into the hierarchy and to behave accordingly.

The presentation is quite a challenge for listeners because it takes more than one hour. During the presentation questions are asked and answers given thus creating an open and active atmosphere.

Next the Nokia designer talks about technical issues, and shows one PowerPoint slide by data projector on the wall. A lively discussion follows. Finally the meeting ends and a next meeting is agreed. Some of the Nokia designers leave the room while a few stay in the meeting room for further discussion.

#### **4.1.4 Teleconference meeting 3<sup>rd</sup> of June 2011**

As earlier explained by Stähle and Laento (2000, 24, 25) virtual teams are geographically isolated teams. Team members can connect with each other by using communication technology in spite of their geographical areas.

Attending the teleconference meeting is possible by dialing a pre-defined teleconference number, tapping PIN- and ID code numbers after which the line is open for all attendees to hear one another and join the meeting. The teleconference meeting is very useful way of sharing information and commonly used when they are unable to participate in face to face meetings.

Teleconference meeting was arranged on sourcing manager's request on June 3, 2011. In addition to subcontracting manager two R&D managers in the company and the supplier Z's representative attend in the meeting. The agenda for the meeting had been sent two

days earlier by e-mail to all attendees and was accepted by everyone. It was agreed that the meeting starts at 2 pm sharp.

In the beginning of the meeting one of the R&D managers were missing so the others decided to wait for him. While waiting for the R&D manager the others made small talk about forthcoming summer holidays and plans for it. After discussing some five minutes about summer expectations an embarrassing silence took place. Nobody had anything more to chit-chat about. Everybody was swearing in their minds about the delay and the miserable R&D manager who caused it. The sourcing manager then in the role of the chairman started the meeting without one of the attendees. The agenda was followed step by step and the meeting was proceeding according to the agenda. Finally the R&D manager joined the teleconference meeting ten minutes late and apologized for the delay, though. Obviously he could hear slightly negative tones of voices among others because the meeting had to be restarted. Thanks to delay the meeting ends fifteen minutes overtime.

#### **4.2 Open interview**

Qualitative interviews are often unstructured, informal, open and narrative in nature. This type of interviewing is particularly useful for exploring a topic intensively and broadly and from participant's point of view. Unstructured interviewing differs from structured interviewing in several ways (Fontana and Frey, 2000). First, although some guiding questions or core concepts are asked, formal, structured interview instrument or interview protocol are not used. Second, the conversation may move in any direction of interest that may come up. Both "what" and "how" questions, which are typical to qualitative research, are asked. These types of interviews rely to a great extent on what the participants talk about. In this research an open interview is used.

One advantage in open interview is that it is highly individualized, and relevant to the participant – not just to the researcher. However, conducting such an interview requires good interpersonal skills. This means that the researcher needs to know how to interact with the participant. Since the researcher receives individualized insights from each of the

participants, this kind of interview is not systematic, nor comprehensive. (Eriksson & Kovalainen 2008, 82-83.)

The other advantage of the interview is most of all the flexibility. The interviewer is able to repeat the question, correct the misunderstandings, clarify the wordings and have dialogue with the briefer. In the interview it is important to gather as much information about the desired issue. (Tuomi & Sarajärvi 2006, 75).

The researcher chose qualitative interview as a data collection method because it gives interviewees the possibility to express opinions freely without any strict pre-defined questionnaire. Since the interviews are aimed to gather understanding of interviewees' experiences it is believed that 'open-ended' questions are most effective way to do it. In the research interview questions like "describe the co-operation between stakeholders" are asked to gain diversities in answers. Silverman, (1999, 10) refers to Finch (1984) by stating that in qualitative interviews the interviewer-interviewee relationship may be defined in political rather than scientific terms. The results of interviews were different compared with each other, emphasizing every interviewer's own opinion and experiences. The interviews lasted between twenty-five minutes to seventy-five minutes. The first step is to contact the interviewees by e-mail and arrange time for interview. Interviewees in this research are four employees in Mobile Solutions organizations in the roles of head of electronic, head of product validation, business controller, the manager of release & reliability.

According to Tuomi & Sarajärvi (2006, 87), the most common question among data collection is the size of the data group; how much data should be collected that the research is scientific, representative and can be generalized. The question is as valid both in qualitative and quantitative researches. The qualitative research describes e.g. phenomenon or event trying to understand an action or an event. In the qualitative research the statistical generalization is not the target. Thus it is important in the qualitative research that the data group has as profound knowledge about the phenomena as possible.

The data group chosen for this research fulfills the criteria, even though a larger sample size would create more validity in the research. As earlier said the research question is what kind of competence expectations do the stakeholders have towards RDSS organization? To answer this question the five interviewees that were chosen to this research have profound knowledge and close co-operation with subcontracting manager in terms of creating R&D agreements and taking care of total cost efficiency.

In spite of their hectic time schedules all the interviewees were willing to be interviewed which was highly appreciated by the researcher. It was important to explain the interviewees that the interview and recording are confidential and the interviewees' personal information will not be exposed. Three of four interviewees gave permission to record the interviews. During recordings it was important not to prompt the interviewee to answer in any particular way. The interviews were recorded successfully. One interview was done by e-mail because his location is outside Oulu. Four interviews were conducted face to face in interviewees' own workrooms. The interviews were conducted between November 9<sup>th</sup> and December 1<sup>st</sup> 2010.

*TABLE 1. Open interviews*

The interviewee	Date
Head of Electronics	8.11.2010
Head of Product Validation	9.11.2010
Business Controller	10.11.2010
Line Manager	15.11.2010
Legal Counsel	01.12.2010
Total	five interviewees

### 4.3 Data analysis

When it comes to analyzing the data, either inductive or deductive analysis methods are used in the qualitative analysis. The deductive analysis is leaning on a particular theory, model or the way of thinking. In the deductive analysis the phenomena is defined by a known theory. In an inductive analysis the theoretical entity is created based on the research data group. Earlier observations, information or theory should not have anything to do with the result. (Tuomi & Sarajärvi 2006, 95, 9.) In this research the inductive analysis is used.

First step to analyze the data was to transcribe the recordings. This step was done right after the interviews. The interviews were conducted in Finnish, even though all the interviewees speak fluent English. The researcher thought using mother tongue is easier to express exact nuances of the sayings and opinions. The transcriptions were written in Finnish as a whole, and in English those parts that will be quoted in the research results. The analysis was started by reading through the received data several times thus becoming acquainted with it. Soon after the interview it is important to start pre-analysis by making additional notes, memorizing the feelings of the interview to have reflection for the following interview. (Eriksson & Kovalainen, 2008, 187.)

As Silverman says (1999, 116), detailed transcripts of conversation overcome the tendency of transcribers to 'tidy up' the 'messy' features of natural conversation. However, it should not be assumed that the preparation of transcripts is simply a technical detail prior to the main business of the analysis. Silverman refers to Atkinson and Heritage (1984) to point out that the production and use of transcripts are essentially 'research activities'. They involve close, repeated listenings to recordings which often reveal previously unnoted recurring features of the organization talk. The convenience of transcripts for presentational purposes is no more than an added bonus. The interviewees for this research were chosen based on the work experience which varied from ten years to over twenty one years in the company. The long work experience gives a profound understanding about the work details



and is assumed to benefit the research results. The interviewees' co-operation with the researcher was daily and close. The gender has no role in this research.

## **5 RESULTS OF THE EMPIRICAL RESEARCH**

In this chapter the results of the research are presented. Observations in business meetings and the interview summaries are described in highlights together with the theoretical information of the observations. Even though there was no pre-defined interview questionnaire made, the relevant similarities and differences in the responses were sought and taken into account. The results are presented bearing the empirical findings and research question in mind. As earlier said the research question was what are the stakeholders' competence expectations for RDSS organization? Based on the results of the research possible development targets will be pointed out.

### **5.1 Results of empirical data**

Observation, open interview and one e-mail questionnaire were chosen for data collection methods in this research. The interviews were conducted during fall 2010 to gain empirical data for the research. Four stakeholders from R&D organization in Nokia Mobile Solutions organization expressed their thoughts in open interviews. It was negotiated separately with every stakeholder if he/she is willing to participate in the interview or not. The researcher explained the purpose of the research, research topic and emphasized the anonymity and confidentiality of it. Stakeholders' attitudes towards the research topic and researcher were positive and supportive. Stakeholders were somewhat curious and asked questions about the studies in general and encouraged to complete the degree. Studying and working at the same time is something they are also familiar with.

Interviewees stayed focused and closed their mobile phones when interviews started. As a result the best ideas came out. When interaction is in focus, the interviews are 'constructionist', meaning interview approaches focus on how meanings are produced through interaction that takes place between the interviewer and interviewee. The more active interviewer is in the role as the other party of the conversation, the more interaction there is between parties. (Eriksson and Kovalainen 2008, 80.)

In the following figure the empirical findings of the research are illustrated.

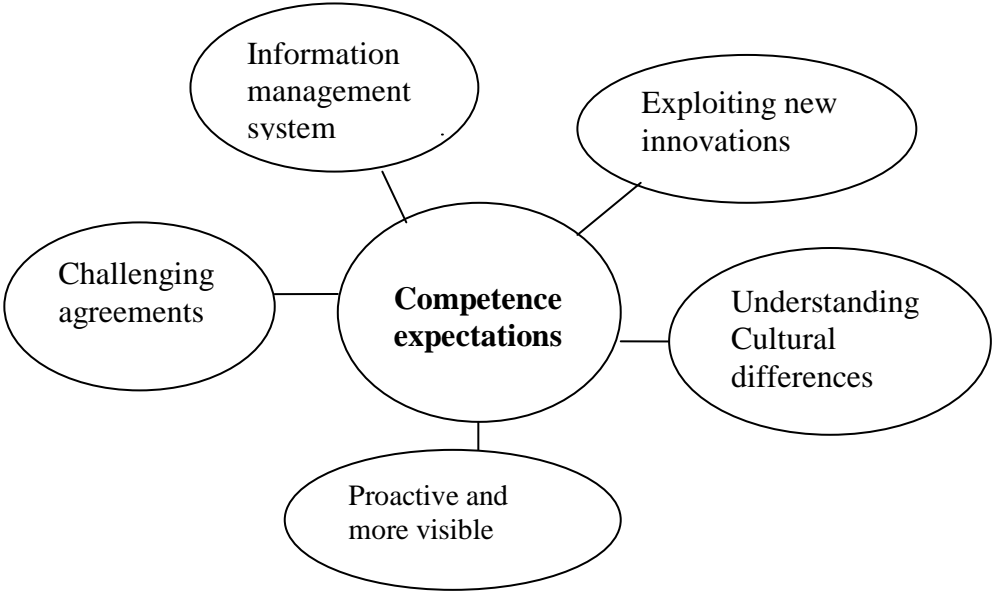


FIGURE 6. Summary of stakeholders' competence expectations for RDSS

Competence expectations are opened up in detail below.

**5.2 Proactive and more visible**

RDSS is globally supporting Nokia's R&D organizations by making external R&D resources available at the right time, with competitive commercial terms and minimum risks. In interviews the RDSS organization's role was emphasized. All interviewees knew what subcontracting means but the RDSS organization was seen somewhat passive. Subcontracting manager as a representative of RDSS should have more active role already in the beginning of the project.

Subcontracting manager should participate in a project in early phase when R&D has an indication that there is not enough own resources and we should start looking for subcontracted resources.

It was also mentioned that subcontracting manager should more actively take part in business meetings. Finance, controlling and line managers welcome subcontracting manager to report subcontracting overall status like new processes, tools and subcontracting agreements falling due. The adequate sequence for these kinds of meetings could be once in three months. It was considered that this way the number of ad hoc business cases decreases and rationality increases.

Interaction between organizations is challenging. To reach the safety base for interaction it is especially important to define the roles of the partners in time. Roles are based on joint targets, resources and each others interests. Roles are of great importance for creating clear rational boundaries for co-operation. (Stähle and Laento 2000, 67.)

### **5.3 Exploiting new innovations**

R&D engineers in the target company say the freedom to use agile, innovative subcontractors in the projects gives an opportunity to learn new and do things in a different way. As a competence expectation RDSS should constantly seek and approve new, agile subcontractors. R&D could adopt their innovations even those who are not in the field of electronics. Information should actively be pushed to R&D to be able to exploit unutilized potential. RDSS should have a bigger role in terms of understanding what kind of competences subcontractors have and actively inform R&D about them.

Usually if we start asking for subcontractors so we are already late.  
Information should be proactively available.

An innovation means a product or service that has commercial value and is a visible research and development work or a new practice in an organization. An innovative organization is able to create constantly something new. It is able to utilize the potential that is not yet defined in company's process descriptions, practices or systems. On the contrary, when new information is born it is often in conflict with old "truths". Company's field of knowledge is based on well-tried history of practices which has been bases for

business line for a long time. Old knowledge is commonly acknowledged including different kind of tacit, silent information thus forming the rational base for the company operations. But with the help of innovativeness and creativity the company is able to achieve the flexibility, agility and renewal and creates new strategic earnings opportunities. (Stähle and Laento 2000, 33, 34, 76.)

#### **5.4 Challenging agreements**

One of the subcontracting manager's responsibilities is finding the most suitable subcontractor for a given project and making the necessary case-specific agreements with the chosen subcontractor. The subcontracting manager has accountability for subcontracting project agreements according to total cost efficiency.

R&D stakeholders think agreements should be clear and unambiguous defining what has been agreed in practice. This gives overall understanding of agreement conditions by both parties. Stakeholders expect subcontracting managers to keep up the contract management skills with L&IP training. This way co-operation is considered satisfactory and stakeholders may focus on their core competences. RDSS role is seen as creating value for R&D through providing expertise in subcontracting negotiations and adaptation processes.

Though co-operation is clear according to one's own interests, an agreement is needed to define and agree on price, roles and responsibilities. Making an agreement is an expertise as such. (Stähle and Laento 2000, 83.)

Different areas of agreements are relevant for different reasons. Partners should understand processes that are related to key areas of contracts in which modifications can easily be done. Stakeholders say overall investigation of agreements in which parties together understand better the content of an agreement would help partners to get clearer information. If agreement is unambiguous or missing areas like economic sanctions, problem solving is time consuming and may cause considerable economic losses. (Stähle and Laento 2000, 83).

## **5.5 Information management system**

Information management should be based on openness, say one of the R&D stakeholders. Open information creates ground for trust and intelligent decision making. A lot of new findings that has been learnt between parties should be stored in an information management system. Partners need a coherent picture about what is happening and what has been achieved. One of the features of the successful partnership is the information that is stored in a system in a technically correct way. Access to documents, detailed contact information and easy to use tools for innovative research and development work are some of the requirements for a successful information management. (Ståhle and Laento 2000, 89-90.)

R&D stakeholders expect to find valuable information in the system like subcontractors' core competences and experiences from other entities of the company. Systems, processes and tools build the pillars in partnerships. Process descriptions should be clear and simple. The sooner the main stages of processes are shaped, the easier it is to adopt them in practice. (Ståhle and Laento 2000, 109.) When people and work are matched to tools, systems and settings, the power is enormous. (Gartner et al. 2001, 18).

## **5.6 Cultural differences**

The researcher participated in three business meetings on 4<sup>th</sup> of November 2010, 10<sup>th</sup> of February 2011 and 3<sup>rd</sup> of June 2011 to gain more empirical data and observing suppliers in their natural environment and made notes in writing. The researcher had a dual role as an observer and a sourcing manager. The researcher did not tell others about the observation to keep the situation as natural as possible, but if using advanced technologies like camera or microphone in the meeting they would create ethical issues. In case they are used it would be polite to ask for participants' permission.

According to Eriksson and Kovalainen (2008, 88) non-verbal communication is just as important as verbal one. Greetings when entering the meeting room, how the people choose

to sit round the table, facial expressions and eye-contact give valuable observation material. In the meeting of November 4, 2010 with supplier X there was a relaxed and optimistic atmosphere. Spontaneous comments, opinions, lively discussions and even jokes characterized the meeting. Long established business relationship and the trust between parties create bases for the optimal business meeting.

Communication, the sending and receiving messages is one of the most common of human behaviors, playing a prominent role in interactions between people. Culture, a key factor in behavior is a key element in communication. What people say, what they don't say and what they mean are affected by culture. (Storti 1997, 87.)

The meeting with Chinese supplier Y of 10<sup>th</sup> of February 2011 is another story. The atmosphere in the meeting was more formal and reserved. According to Axtell (1998, 178-179) silence is a virtue in China. In business meetings periods of silence are signs of politeness and contemplation. Small talk is not typical in Chinese business culture, which may come as a surprise for Western business people. In the meeting room supplier's salesmen sat on the other side of the table according to the special hierarchy. The highest status person is close to the primary host, the rest were seated next to secondary host. Business associates are introduced to the senior Chinese persons first. The Chinese customs and culture characterize business behavior. It is beneficial for the business if the counterparties know how to behave according to cultural characteristics and adjust one's behavior the way the business partners communicate. Studying cultural differences in the literature and interviewing experienced colleagues are valuable sources of information when entering a new cultural environment.

## 6 CONCLUSIONS

In this study stakeholders' competence expectations towards RDSS organization in the target company were searched. As importantly, based on the results of the study, what are the areas which should be developed? As the empirical data was four open interviews, one e-mail questionnaire and observations in three business meetings, heavy generalizations can not be made.

*Research and development subcontracting sourcing role was seen important and necessary.* Subcontracting is cheaper and much quicker process than recruiting a new person. The problem in mobility industry is the future changing quickly thus making forecasting difficult. Due to quick changes it is difficult to see to the future and plan needed resources. They are needed in the project when R&D stakeholder contacts subcontracting manager for the first time. As one of the interviewees said, they are already late when starting asking for the resources. This might be one of the reasons why *RDSS organization was seen somewhat passive.* If the request for a resource allocation does not meet the subcontracting manager in good time, the resource may arrive too late in the R&D project.

As earlier stated, definition of RDSS is globally supporting Nokia's R&D organizations by making external R&D resources available at the right time, with competitive commercial terms and minimum risks. Support should go the other way around as well; R&D should inform RDSS earlier about the future requirements. As a result *stakeholders think subcontracting manager should participate more in daily business to have better insight into subcontracting requirements in the near future.* Sometimes there is a simple reason for the absence and easy to correct; subcontracting manager's e-mail address has dropped from the distribution list. One of the interviewees said subcontracting gives possibility to fulfill the short time resource or competence needs and calms down the ad hoc situation. The stable situation should be utilized and concentrate in resource planning, he said.

According to the results proactive attitude towards R&D organization was emphasized. Stakeholders say *RDSS representatives should have a stronger and more visible role in*



*surveying and approving agile, small subcontractors, even those who are not in the field of electronics.* R&D found big subcontractors rigid and their technologies old. Agile subcontractors give possibility to do things in a different way and learn the newest technology which R&D thinks is extremely important. Objective of this research was restricted in seeking competence expectations and improvements. Next step would be conducting a deeper research in supplier selection processes.

*There will always be subcontracting, at least to some extent, say many of the interviewees.* That is why it is worth putting the effort in collaboration between stakeholders and RDSS organization. Communication between R&D and RDSS should be more open and constant. Based on interviews R&D has a positive attitude towards subcontracting sourcing which is a fruitful basis for developing the work environment. Generally speaking the *co-operation between parties has improved over the years.* Responding quicker to requests and readiness for a change are typical features of the collaboration.

## 7 DISCUSSION

Objective of the thesis was to find answers to stakeholders' competence expectations towards RDSS organization. Secondly, based on the answers, what are the areas that should be developed? To achieve the research objective the answers to the research questions were sought by conducting a qualitative empirical research.

The stakeholders are five R&D representatives in Nokia Mobile Solutions organization. Even though the number of stakeholders is limited, it is the quality and material obtained from the interviews that are decisive, not the number of interviews as such. (Eriksson & Kovalainen 2008, 291.) In the qualitative research the statistical generalization is not the target. Stakeholders chosen for this research have several years of R&D work experience and every day business connections with subcontracting. Work experience gives a profound understanding about the work details and improves reliability in the research. Eriksson and Kovalainen (2008, 52) say it is worth doing a study in an organization or with people the researcher knows because access to individuals and written research materials is easier. Knowing organization improves possibility to develop detailed contextual knowledge which is a key point in a qualitative study.

In addition to studies at Oulu University of Applied Sciences the literature and other sources of information were studied for the theoretical framework. In the huge information flow understanding the difference between the essential from unessential is important in terms of quality of the work

The interviews were analyzed as thoroughly as possible and quotations were referred in the research results. Unfortunately it was not possible to have a group meeting after the individual interviews due to stakeholders' hectic schedules. It would have been good for the validity of the research. Answers in the e-mail questionnaire were included in the research results. Observations were made in three business meetings to gain more empirical data for the research. It can be said that the research reached the objective; based on the research

results competence expectations were defined and constructive proposals for improving co-operation were highlighted.

Writing process has been demanding and rewarding experience for me. I have created many documents and written many reports at the previous job but had no earlier experience in writing a thesis. First lesson to learn was to understand that there is another point of view in writing the thesis than work documents. Hiding one's own personality behind work documentation is easy. Writing a thesis is more personal process and exposes writer's own voice. It is a big learning curve as a such. I started the writing process at the beginning of the thesis, along with reading theoretical books and gathering empirical data. Writing helps to understand the whole, analyze the data and instruct the way how to move on. Editing, wrapping up and condensing have been most challenging part of the work. Probably that is why there are tens of different thesis versions in my computer files. Eriksson and Kovalainen (2008, 287) refers to Woods, 1999 saying that the entire manuscript should be reworked for cohesion, accuracy and consistency.

The original schedule for the thesis process was challenging but proceeding well at first. Work load was reasonable and tutoring teacher gave valuable instructions and guidance when needed. My responsibilities between work and study were in balance. But as earlier said nothing but change is constant in today's business. New strategy change in the target company created new organization structures letting many experienced employees to go. When negative changes happen in working life they inevitably have effect on the personal life. For a while my focus was in facing the new situation. It was time away from thesis process and caused a couple of month's delay in schedule. The interest to the research topic and willingness to graduate gave me the energy to complete the thesis.

Thesis process has been a good learning experience for me. Defining competence expectations and qualifications are valuable information for RDSS in developing the work for a higher level. The objective of the research was restricted in defining competence expectations and development suggestions. Next interesting step would be conducting a deeper research about processes how to accomplish them. It could be a quantitative

research with surveys and questionnaire as data collection methods. Conducting a quantitative research would give me the possibility to learn new research method.

Finally, five stakeholders, commissioner, opponent and thesis supervisor should be thanked for their time, support and constructive comments during the thesis process.

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