New Relationships

And

Network Contexts

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Abstract
As companies do business with each other they establish a number of close and longstanding relationships. These relationships act as a source of stability and therefore become more and more integrated into each other. Over time a set of interconnected relationships are formed and actor is viewed as being a part of a business network. The company however regards few of these relationships as most important and these companies make up what is called the actor’s network context. This context however changes over time as a result an actor’s interaction with other companies. This study examines the changes that take place in a company’s network context as it enters into new relationships. The company - Radi Medical - referred to as the actor in this case has recently entered into two major relationships that have and will continue to result in a number of changes in its network context. From the accounts given by managers within the company we find that different new relationships depending on their nature, do have varying impacts on an actor’s network context. Ultimately, the study indicates that no one company can with all certainty foresee or determine the outcome of any new relationship on its network context.
Introduction

Problem Discussion & Definition
In order to understand a company’s most important relationships and thus its network boundaries, researchers have set arbitrary boundaries that fit specific situations. Such boundaries constitute an actor’s environment, network horizon and network context. These concepts have been effective in understanding a firm in the context of its current relationships and helps researchers understand the exchanges that take place within these relationships. These arbitrary network boundaries, despite their ease in explaining the exchanges between collections of interconnected companies, are not static in nature. In fact, these arbitrary boundaries continuously change or evolve over time as changes occur within each of the actors in the network or when changes occur in certain relationships. From time to time, companies cease to exist, new companies are formed, new innovations are discovered and new relationships are formed. When firms within a network experience these (and other) changes, arbitrary ripples are sent out in this arbitrary network and have positive or negative effects on the actors involved. In order to understand the effects of these changes, we need to take a closer look at the part of the network horizon, which the firm considers relevant - its network context. Here we find an actor’s closest relationships and therefore those relationships that will benefit most or be impacted sooner and more dramatically as it enters into new relationships. The study will therefore be focused on understanding the concept of the business network context and see how this context is affected as an actor enters into new relationships.

The concept of the business network context, and its significance in explaining “that part of the network which a single firm is aware of and thereby can take into account”, has received some research attention in explaining relationships in business networks (Holmen & Pedersen 2003). There has been two publications regarding acquisitions and network horizons, (Salmi, Havila, Anderson 2001) and a second study on Strategizing through analysing and influencing the network horizon (Holmen & Pedersen 2003). These two studies have clearly shown that the concept of network contexts is of importance as it a) is affected by dramatic changes in business relationships for example acquisitions and that b) an actors’ network context must be taken into
account when planning and executing strategy. Further research therefore needs to be conducted regarding an actor’s business network context and those possible network variables that it affects and vice versa. The variables I would like to argue present themselves constellation (or number) of relationships that an actor is involved in and also, the exchanges that take place in the relationships since “the network horizon of an actor changes over time as a consequence of doing business (Anderson, Håkansson & Johanson 1994). As a company’s network horizon changes, so does the network context. This begs the question of how does the scope of an actor’s network context is affected by its new relationships?

In order to maintain its value in a network, an actor must actively and continuously ensure that it maintains its relevance to its customers and other companies with which it has established long term relationships. One requirement is that the firm has a sufficient overview of the network and its dynamics. In other words, a firm’s strategy depends on the firm’s overview of the network—its network horizon (Holmen & Pedersen 2003). It is also of tremendous importance that firms align themselves with those firms that best complement their core functions or help them to take on those functions that may be less profitable. The alignments described here, although not exhaustive, are seen as business relationships. The most important of these relationships that an actor is involved in and considers relevant comprises the actor’s network context. Within this context firms share activities, resources and develop bonds with other actors. As an actor enters into new business relationships it becomes, through its new partners or counterparts, connected to that counterparts’ network and vice versa thereby extending or broadening its network context. As its network context becomes broader, new network actors are not only exposed to it but the actor is also exposed to new network actors. Anderson, Håkansson & Johanson (1994) describes an actor’s network horizon as denoting how extended an actor’s view of the network is these descriptions are perfectly correct, I would like to propose that a company’s network horizon may include those indirectly connected firms that the actor is aware of and is able to have an impact on and also those indirectly connected firms that the actor is aware of but is unable to have an impact on therefore creating layers of an actor’s network horizon. As the network horizon of an actor changes over time as a
consequence of doing business (Anderson, Håkansson & Johanson 1994), so does the actors network context.

Business marketers need therefore to carefully select and enter those relationships that not only serve the purposes of achieving their immediate ambitions but also those relationships that will place them in the most lucrative network context. The medical industry is far from exempt from this notion as the success of each actor is tightly intertwined with its ability to continuously impact its network context and its ability to attract and engage other desirable actors. Radi Medical is one such medical company that that is involved in different types of relationships that have made the company and its innovations more desirable to those actors that in its horizon that it considers as relevant. As it enters into new relationships, Radi Medical needs to fully understand the changes in its network context in order to be able to fully exploit its new constellation of relationships.

**Purpose**

The fundamental aim of this paper is to therefore explore how the scope of an actor’s network context may change as it enters into new relationships. It therefore explores the potential opportunities and boundaries that new relationships may bring to a company and its existing relationships. In order to achieve this, an empirical study of Radi Medical in Uppsala Sweden will be conducted. The paper will examine the development of a number of Radi Medical’s new relationships and how these relationships impacted Radi Medical’s existing relationships. The paper will therefore be structured as follows; Review of the literature on Business relationships, Network Context and network horizon, Choice of Methodological approach, an empirical study of Radi Medical, discussion of the findings, conclusions and suggestions for further research.
Literature Review

In the following sections, I will present a review of the parts of the literature that focus on business relationships, network contexts and network horizons. I will at the end propose a model from my findings in the literature depicting an actor’s network horizon and context. An empirical case study on the company in focus and discussion of the findings will subsequently follow.

Business Relationships

During the 1990s, relationships have played an integral role in business strategy. Simultaneously, researchers from many different disciplines have also started to pay increasing attention to relationships (Holmlund & Törnroos 1997). A business relationship can be seen as a process where two firms or other types of organizations “form strong and extensive social, economic, service and technical ties over time, with the intent of lowering total costs and/or increasing value, thereby achieving mutual benefit” (Anderson & Narus, 1991, p. 96). One could conclude that relationships are central to a firm’s competitiveness and survival. These relationships are based on the notion that there exist links and ties of substance that connect actors together (Holmlund & Törnroos 1997). Relationship linkages are by nature, continuous over time, instead of being characterised by a series of unrelated and impulsive transactions. Relationships are also often of a complex nature, consisting of a web of interactive and interrelated relations between individuals in both organizations (Håkansson & Snehota 1989). Within the framework of such inter-organizational relationships, a complex set of interdependencies between companies gradually evolve. Activities within one party are connected with activities carried out in the other. Activities are carried out by actors pursuing their own goals and possessing their own perceptions of the interacting party’s activity pattern, among other things. (Håkansson & Snehota, 1989). Activities undertaken by the parties in a relationship cannot, therefore, be connected without the active and reciprocal involvement of both parties. The establishment and development of an Interorganizational relationship requires a “mutual orientation. Relating the activities of the two parties to one another entails adaptations and the establishment of routines on both sides. (Håkansson & Snehota, 1989).
Given the distinctive nature of the parties, the interdependencies in the relationship become further strengthened. Through their relationship either party can gain access to the other’s resources. To some degree actors can therefore mobilize and use resources controlled by other actors in the network (Håkansson & Snehota, 1989).

In carrying out their business activities, firms may develop relationships with various types of firms and other types of organizations because they affect, directly or indirectly, their performance. One study reports that, on average, firms have ten important business relationships. Thus, we can talk about a firm’s supplier, customer, complementor and competitor portfolio (Håkansson & Snehota, 1989).

Dyadic dependence relations between firms in business markets do not exist in isolation. Most firms are engaged in a set of important business relationships. Firms in such markets are tied together directly and indirectly through networks of relationships which may extend in any direction without limit (Holm, Eriksson & Johanson 1999). These business relationships perform a variety of functions for those involved (Håkansson & Snehota, 1993), through the activity links, actor bonds, resource ties, and schema couplings that result (Håkansson & Snehota, 1995).

From a network point of view, these relationships fulfill certain functions. These functions can be characterized with respect to three essential components: activities, actors, and resources. The primary functions of the relationships corresponding to activities, resources, and actors are efficiency through interlinking of activities, creative leveraging of resource heterogeneity, and mutuality based on self-interest of actors (Anderson, Håkansson & Johanson 1994). The dynamics and change in business networks have aroused increasing interest among researchers of industrial marketing. Research has covered a broad range of issues, from the development and change of individual business relationship as it pinpoints the importance of both direct and indirect, close and distant relationships for understanding change and allows us to see that relationships may function in various important roles in the generation and transmission of change relationships (Halinen, Salmi & Havila, 1999). Activities performed by two actors, through their relationship, can be adapted to each other so that their combined efficiency is improved, such as in just-in-time exchanges (Frazier, Spekman, O'Neal, 1988). Companies build
exchange relationships with other companies and through these become connected to broader networks of business relationships (Halinen, Salmi & Havila, 1999). The network approach views any company's business context in a holistic rather than fragmented way. It pays particular attention to the connectedness of business relationships and the borderless nature of the network in which each company is embedded. As different parts of a network are linked, change may emerge and shift from any one part to another - an occurrence that the network view can reveal better than traditional organization theory or marketing approaches.

Functions of Relationships- Activity Links, Resource Ties & Actor Bonds
The basic logic here is that of the firm as an actor performing activities and employing resources. Business relationships therefore have primary functions (Anderson et al. 1994). The A-R-A model (Anderson, Håkansson & Johanson, 1992) outlines how a business relationship can be analyzed through its individual substance layers: actor bonds, activity links and resource ties. Activity links refer to the connections among operations that are carried out within and between firms in networks and how mutual adaptations in activities take place between relationship partners. Resource ties develop as companies exchange or access each other’s resources in carrying out their activities, in the process often transforming and adapting existing resources and creating new resources. Actor bonds refer to the ways individual and collective (organizational) actors in a relationship perceive and respond to each other both professionally and socially. These bonds arise over time and are mutually adapted through the knowledge and experience gained in interaction (Welch & Wilkinson, 2002).

Actor bonds therefore describe the bonds between the actors, either individual or organizational, through their perceptions of each other and their trust and understanding of each other (Lurdes Veludo, Macbeth & Purchase 2004). Activity links describe the links between organizations that are formed by activities that the actors perform with each other. Resource ties describe the organizational ties that are developed through resource inputs and outputs (Lurdes Veludo, Macbeth & Purchase 2004).

An actor’s network context is composed of the three dimensions pointed out in the discussion of primary and secondary functions of relationships (Andersson, Håkansson & Johanson 1994):
the actors, who they are and how they are related to each other; the activities performed in the network and the ways in which they are linked to each other; and the resources used in the network and the patterns of adaptation between them. The contexts are partially shared by the network actors, at least by actors that are close to each other (Andersson, Håkansson & Johanson 1994). Actors are credited with intentions and capability, while actor bonds are created through time as firms interact and learn about each other’s identity in the network. Furthermore, each firm may only enact a limited number of actor bonds, with each providing important clues to the firm’s identity and strategy (Håkansson and Snehota 1995). Actor bonds therefore have an effect on what the parties in a relationship or network of relationships know about each other and what they can exchange. They can also therefore mobilize and use resources controlled by other actors in the network.

The number of relationships that an actor has can vary. On average, firms have ten important business relationships (Håkansson & Henders, 1992). The different types of potential relationship partners may be conceptualized in terms of the firm’s value net (Brandenburger & Nalebuff, 1997) (cf. Ritter, Wilkinson & Johnston 2004). There is reason to consider business relationship development in the strategy process. These bonds include the closeness-distance, degree of commitment, power-dependence, degree of cooperation, and conflict and trust among relationship partners (Anderson et al. 1994, p. 2). Suppliers and customers in a focal business relationship are in turn connected to other parties that affect the exchange, forming a business network comprising “a set of two or more connected business relationships” (Anderson et al. 1994, p. 2). Hence, the actor bonds, activity links and resource ties that evolve in a single dyadic relationship are connected to a wider web of actors, activity patterns and resource constellations comprising the business network (Welch & Wilkinson, 2002).

“Business relationships are connected to each other (Welch & Wilkinson, 2002). We can explain this by using the example of three hypothetical firms that are related to each other through two of their business relationships. Interactions between any of the two firms will depend on what takes place as it relates to the third firm. If company X is a supplier to company Y and Z, then any changes that occur in the relationship with company X and Y will subsequently have negative and or positive effects on its relationship with company Z. (Welch & Wilkinson, 2002).
In the same way, if company X is a customer of both companies Y and Z then what occurs in the relationship with X and one of its supplying will have an effect on company X’s relationship with the other (Welch & Wilkinson, 2002). Third, if the three firms operate in a distribution chain, where X sells to Y, which then sells to Z, then interaction in either of the two relationships affects the other (Welch & Wilkinson, 2002). When any resources or activities are shared between relationships there will be either a positive or a negative connection between them (Welch & Wilkinson, 2002). What happens in one relationship will always affect all connected relationships, sometimes marginally, but often substantially. Thus, the development of any one relationship between two companies will depend on a number of factors: on what has happened in the past in the relationship; on what each of the two parties has previously learned in its other relationships; on what currently happens between the companies in the relationship and in others in which they are involved; on the expectations of both companies of their future interactions; on what happens in the wider network of relationships in which they are not directly involved (Welch & Wilkinson, 2002). We could also argue that the development of any one relationship will affect on what currently happens between the companies in the relationship and in others in which they are involved; on the expectations of both companies of their future interactions; on what happens in the wider network of relationships in which they are not directly involved.

**Business Network Horizon and Context**

Due to the fact that and actor’s network context is not tangible it is rather difficult to measure which relationships it actually consists of. It is also difficult to set any contextual boundaries as the measures may not be quantifiable. To make an objective selection of which business relationships to include in the network context would perhaps be possible using measures that reflect each relationship’s importance for the company, for example in terms of sales volume, profitability, purchase volume, number of technical development projects, or the number of people involved in the interaction (Thilenius 1997 p. 8-9). A closer look at the nature of each relationship with the counterparts that the boundary for the therefore needs to be taken. These close relationships can also be seen as those direct relationships where the company has it
strongest *actor bonds, resource ties and activity links* (Håkansson and Johanson, 1992). Since these elements are the building blocks of an actor’s relationships and therefore its network context it is therefore these elements that will be affected by an actor’s new relationships. Thilenius (1997 p. 8-9) holds that the operationalization of business networks can be done by two basic approaches. The first concerns case studies of specific companies’ business networks where the data is of a quantitative nature

Due to the fact that an actor’s network setting extends without limits through connected relationships, making any business network boundary arbitrary the concept of the network horizons was developed for the purpose of analysing and actors business network. This network horizon denotes how extended an actor's view of the network is. The network horizon of a firm is defined by Anderson et al. (1994, p. 4) as “how extended an actor’s view of the network is.” Hence, a network horizon comprises those other firms and relationships of which a focal firm is aware, whether or not it considers them relevant. So far, a number of attempts have been made at investigating the network horizons of firms, two examples being a study by Salmi, Havila, and Anderson (2001) who discuss the network horizon of a firm in relation to acquisitions. This shows that an actor’s network horizon and context is affected by different variables. The network horizon can be expected to be dependent on the experience of the actor as well as on structural network features. This implies that the network horizon of an actor changes over time as a consequence of doing business. At the same time, it clearly demonstrates that any business network boundary is arbitrary and depends on the perspective of an actor involved (Anderson, Håkansson & Johanson, 1994).

The firms and relationships in a firm’s network context can consist of its direct counterparts and relationships as well as its indirect counterparts and relationships. Secondly, the network context comprises all firms and relationships that a focal firm “considers relevant” (Anderson et al 1994). By using the criterion of relevance, it is stressed that the network context is a matter of the firm’s “choice of perspective” which, in turn, related to the firm’s (actor’s) cognitive processes. By stressing choice, there must be something that is disregarded; firms must be aware of more than what they view as being immediately relevant to consider as a basis for their actions. This seems to be the reason why a network context is conceptualized as being
enveloped by a network horizon. Business relationships can be better understood if they are viewed in a context of other business relationships rather than as isolated entities. Firms furthermore, base their actions on a limited set of relationships (Håkansson & Snehota, 1995). Where the network view of the organizational context holds, some of the organization’s relationships with other organizations in the network constitute in themselves one of the most - if not the most - valuable resources that it possesses. Through these relationships with other parties, resources and activities are made available and can be mobilized and exploited by the organization in order to enhance its own performance. Access to the other party’s resources - resources that complement those of the focal organization - constitutes an important asset (cf. Håkansson & Snehota, 1989; Fiocca and Snehota, 1986). According to a somewhat more extreme view of the assets of a business organization, it is claimed that the “invisible” or “intangible” assets assume a central role in organizational effectiveness, since they are the differentiating factor in performance that gives an organization its distinctive identity (cf. Håkansson & Snehota, 1989; Itami, 1987; Vicari, 1988). The invisible assets, consisting largely of knowledge and abilities, fame and reputation, are mainly created in external relationships. Furthermore they cannot be separated from these relationships. In view of the role of “external” resources and interdependencies stressed in the network view of business organizations, it becomes meaningless and conceptually impossible to disconnect the organization from its context. The organization appears without boundaries in as much as it is to a certain degree constituted by resources and activities controlled by other parties forming the network, and exists only in the perceptions of other parties. It develops its distinctive capabilities in relationships with others (Håkansson & Snehota, 1989). In this management perspective it is essential to make the distinction between controllable and non-controllable variables. If this is to be done with a view to identifying the determinants of the organization’s performance then the boundaries of an organization should be defined more broadly so as to include the critical connected activities and the resources that can be mobilized as a result of the ongoing network relationships - in other words, the context of the organization. How much of the context the organization constitutes depends of course on the degree of interdependence within the context (Håkansson & Snehota, 1989).
Based on the preceding literature, a general model of the impacts of new relationships on the scope of an actor’s network context is formulated and will be used to analyze the empirical findings. The model gives a synopsis of what happens in an actor’s network context as a result of its new relationships. It should however be noted that each new relationship may not have an impact on the whole context, but some specific relationships will be affected. Firstly, the large dashed circle represents the actor’s network context which includes the actor’s closest and most important relationships. Within the dashed circle we find the focal company at the centre and its connected relationships. We also have an arrow that represents the establishment of the new relationship. The model below represents the hypothesis that; as an actor enters into new relationships certain positive or negative changes may occur in the scope of its network context. In the following sections, a case study will be carried out in order to explore how and why the company’s network context is impacted by its new relationships. A discussion of the findings according to the model will ensue.

*Image showing new relationships impacts on an actor’s network context*
Method

Research Strategy
This research paper takes an exploratory approach in that it sets out to find out what is happening Radi Medical Systems with regards to the way its new relationships affect its network context. Exploratory studies are particularly useful if you wish to clarify your understanding of a problem, such as if you are unsure of the precise nature of the problem (Saunders et.al 2008). Furthermore, this type of research purpose should be employed when the research problem has not been precisely clearly defined and needs further clarification (Ghauri and Gronhaug, 2005). In this situation there is relatively little theoretical information or previous studies on the topic of study especially as it relates to the company’s business network relationships and contexts as a whole. The aim here is therefore to examine the company with regards to its existing stakeholders and network counterparts and see how strategizing by getting into new relationships changes its network context and horizon.

The study was conducted by examining the company in focus as well as academic literature as well as interviewing and having short discussions with marketing professionals at Radi. These persons were chosen as they were the ones with extensive knowledge in the area due to their hands-on experience in dealing the company’s relationships. Since the paper is concerned with exploring, describing and to some extent explaining what why and how new relationships affect a company’s network context, case studies seem to be the most suitable strategy (Saunders et.al 2008). Case studies are defined as an empirical inquiry that investigates a contemporary phenomenon within its real life context, when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources are used (Yin, 1989, pg. 23). The study incorporates a single case study as it provides the opportunity to observe and analyze a phenomenon that few have considered before. Within the single case, I will outline two instances where the company in focus enters into relationships with varying degrees of embeddedness and mutual control in order to address the research purpose.
Sample & Sample Size
Cooper & Schindler, 1998 suggest that for case selection, probability methods based on the concept of random selection, which is a controlled procedure which assures that each element of the total population is given a non zero chance of selection. This suggestion was deviated form as a non probability or convenience sample method was used. At the outset, RADI Medical Systems was chosen for number reasons. To begin with, the company was relatively small but had market leadership in its product area which made it a lot easier to get a better picture of the company’s network context. Its size compared to the market potential showed that Radi Medical had tremendous growth potential and would therefore be exploring its growth opportunities. New strategic network relationships were therefore inevitable. Second, the company had just engaged in two major relationships that were highly likely to have some impact on its network context and horizon. Radi’s marketing professionals were also quite open and willing to facilitate in the in the interviewing process.

Due to proximity advantages it was most practical to examine a company with operations in Uppsala Sweden as this allows for ease of physical access when conducting interviews especially due to the fact that multiple interviews and shorter conversations were conducted. It should however be noted that the case includes information about other companies that are directly involved in the process, but from Radi Medical’s perspective

Data collection & Analysis
Data Collection was conducted by carrying out personal interviews and discussions with the Director of Business & Market Development, The Director of Marketing a Product Manager. The interviewing process was limited to these persons for a number of reasons. After the first set of interviews, two major new relationships were discovered to have taken place at RADI; the relationships with GE Healthcare and the relationship with St. Jude Medical. It was also found that the persons involved in the first set of interviews (Tobias and Iohn) were the persons who were either directly involved in the initiation of the relationships (in the case of GE Healthcare) or had extensive knowledge of the impacts of these new relationships on Radi’s existing relationships. The interviews also provided overlapping responses to the interview questions and interviewing more persons would have yielded similar answers. Three personal interviews
were conducted with Tobias and Iohn while informal discussions and emails were exchanged with Johan Svanerudh. Mr Svanerudh also provided written answers to the second interview questions. Secondary data was also be used to support the primary data collected by the interviews. These include company publications for example information from Radi medical’s international web site, the company’s annual review for the financial year 2007 as well as other information available on the web sites of the other St. Jude medical regarding the acquisition.

Semi-structured interviews were conducted in order to gain a deeper understanding of how the managers perceived the impact that that these new relationships had on their network context and horizon. As opposed to structured interviews, a semi-structured interview affords the interviewer the possibility to adapt the questions to the specific context of the company. In this context other vital issues may be uncovered due to the flexibility of the interview as opposed to a totally structured interview (Saunders et.al 2008). I therefore had the flexibility to probe answers where I need the interviewee to explain or build on his responses. The Interviews were conducted in two phases. First, interviews were conducted to get a proper overview of the different issues concerning the company. In the second phase, questions were more focused on the topic at hand. In both phases, the questions were sent to the interviewees beforehand so that they would have time to reflect upon the answers before the actual interview. The data that were collected from the interviews were then be triangulated or cross-referenced with collected secondary data as well as theory in order to draw the necessary conclusions. The interviews were recorded as audio files and then transcribed shortly after. Only one interview was not recorded as an audio file due to technical problems with the recorder. Notes were however taken during the course of the interview.

After the transcription of the interviews, comparisons were drawn between the theoretical model and the answers given by the respondents. After the first interviews, questions were again posed to the interviewees and were structured according to the new relationships. This helped to ensure that the answers were also structured in this manner for analysis. Questions such as; what were some of the main benefits that were expected prior to the start of the collaboration? And; have you gained any new relationships (customers or other collaboration partners) as a result of the GE collaboration? were asked about both relationships. these
questions yielded answers that gave both, some background on the actual case as well as highlighting the actual impacts that the new relationships had on Radi. Within-case analysis was employed in order to see the major resemblances and differences between the theoretical framework established in literature on business networks and the case study findings. A comparison of the findings in the different situations where Radi Medical had entered into new relationships contributes to the discussion section as well as to draw possible conclusions.

**Reliability and Validity**
Research quality is usually assessed by taking two measures into account, reliability and validity. Reliability refers to the extent to which data collection techniques or analysis procedures will yield consistent findings (Saunders et.al 2007). Since interviews were conducted with the actual persons who were involved in and were affected by Radi’s new relationships, the data collected were free from the inaccuracies that could be brought about by getting second hand information from other members of the company. The fact that the interviews also yielded closely similar responses showed a lesser likelihood that the answers were not subject to participant bias or error.

The study however has some limitations that need to be taken into account when interpreting the results. The study does not provide detailed information about the other counterparts and their experiences in their new relationship with Radi Medical since the study was done from Radi’s perspective. Due to the short time span over which the study was conducted, the results may reflect incremental changes in the as it relates to the impacts that the new relationships would have on the company’s network context. A study conducted over a longer period of time would therefore reflect a clearer picture of the long-term effects of these new relationships. This may therefore affect the reliability of the study. Such a study may also give a better reflection on the actual long term opportunities and possible restrictions that these new relationships may bring to the company.
Empirical Study

RADI Medical Systems
Interviewees and contact persons; Ionn Ryott; Director of Marketing, Tobias Tullberg, Director of Business & Market Development, Johan Svanerudh Product Manager.

Located in Uppsala since its inception in 1988, RADI Medical Systems (Radi) has been developing, manufacturing and selling medical devices within interventional cardiology, homeostasis management and radiology. The company now boasts a line of market leading devices within the respective fields. In a bid to achieve and maintain market leadership, RADI works closely with a wide range of medical practitioners and institutions to develop solutions that address clinical needs, as well as providing clinical education and support. The company currently employs approximately 380 people around the globe and operates in just over 60 countries.

![Total sales according to product area](image)

Image Showing Radi's sales according to product area (Radi Annual Review 2007)

One of these products that Radi develops and markets is the Intravascular Sensor. Intravascular Sensors consist of a range of sensors and instruments that support physicians in their day to day clinical decision making, specifically for intracoronary physiological assessment. The sensor provides precise, information on lesion (injury) severity (or the severity of cardiac arrest) in
patients that have suffered a coronary attack, thus enabling the physician to accurately guide coronary intervention with a high degree of certainty. Radi pioneered the concept of coronary lesion assessment using Fractional Flow Reserve (FFR) together with researches in the scientific community and today, their sensor; PressureWire®Certus, is the leading pressure guidewire for measurement of intravascular pressure, and assessment of FFR, in many of the world’s busiest catheterization labs (Intravascular Sensors 2009).

Throughout its 20 years of existence, RADI has organically expanded its market reach and product range while maintaining significant and constant growth through its relationships with medical practitioners and institutions.

The company’s sells almost exclusively to hospitals and catheterization labs. Since interventional cardiologists are among the few medical practitioners that administer FFR routines and therefore using the PressureWire®, up to this point most of the company’s marketing emphasis has been placed on the adoption of the FFR routine among this group.

Previously (and even today), lesion severity has been measured by Intravascular Ultra Sound (IVUS) a procedure that makes visual assessments of lesion severity by using contrast images that produces a pressure measurement number but may not be totally accurate at all times. Despite this shortcoming, physicians are already accustomed to the IVUS procedure and were initially more inclined to use that procedure instead of a new one regardless of its superiority. The adoption of the Frequency Flow Reserve was therefore achieved partly by conducting training workshops and seminars which are conducted by sales representatives and clinical specialists. This training does not only include the actual doctors but also training medical staff since they are so crucial to the success of the procedure as well or the level of ease at which the doctors are able to adopt and administer the FFR procedure. As described by John Ryott Marketing Director at Radi Medical:
Other efforts at increasing the awareness and adoption of the FFR procedure included physicians, clinical staff, patients and different financing bodies in the company’s marketing communications audience. Such a strategy would see the company addressing questions that each party may have in a bid to have a favorable impact on their purchasing decisions. Despite the fact that the actual buyers and users of their products are the actual doctors or hospitals that administer treatment to patients, the company has decided to target its communications to three different groups. Firstly, the company tailors its message for the actual doctors, and medical staff who are responsible for administering the FFR Procedure as well as referring doctors. This includes as mentioned before, all practical and detailed information about the PressureWire® system as well as training for the medical staff administering the procedure. For this group, greater focus is placed on communicating (among other benefits) the products’ effectiveness and its ease of use.

Second, the County Council (Landsting) in the case of the Swedish market, insurance companies and CMR in the case of the US and other international markets were included as they were the ones who actually pay for the administration FFR Procedure and thus pay for the purchase of the PressureWire® system. In the Swedish market, the state pays for the health care system through the County Council while in the US and other international markets health care is paid for mainly by insurance companies and or CMR; Division of Health Care Finance and Policy and Administrative Services. For this target group, more emphasis would be placed on the fact that administering the FFR Procedure both improves patient outcomes while being cost effective. The problem however for Radi was that the company was too small to have any significant impact on these financing groups. Furthermore, despite its significance, Interventional Cardiology was such a small field of medicine that these reimbursing groups were not as keen on paying for the FFR procedure if there was no significant proof that the procedure increases their chances of saving lives and money. The third group is comprised of patients and the emphasis here would be placed on educating patients and or family members about the FFR
procedure both in terms of its effectiveness and also communicating favorable statistics in terms of successful cardiac cases. The above mentioned groups all have an influence in the purchase and adoption of the FFR procedure and will also have an influence on RADI’s ability to market to patients.

The New Relationships

Collaboration with GE Health Care
In June 2009, Radi Medical and GE Healthcare announced the worldwide commercial launch of the first fully integrated wireless solution for the measurement of Fractional Flow Reserve (FFR). The new FFR solution, seamlessly integrated into existing catheterization lab (cathlab) infrastructure, now enables physicians and cathlab staff immediate access to FFR measurement without time consuming setup. The collaboration would see the integration of Radi Medical’s PressureWire®Aeris technology and GE Health Care’s Mac-Lab® hemodynamic recording system, a system used to record and display physiological parameters in coronary cathlabs (St. Jude Medical and GE Healthcare announce worldwide market launch of wireless Integrated FFR solution 2009).

The Mac-Lab FFR interface uses GE’s existing cathlab infrastructure, including screens, input modules and controls, and together with Radi’s PressureWire®Aeris technology forms a seamlessly integrated FFR measurement system for greatly improved cathlab workflow and ease of use. According to Augusto Pichard, M.D., professor of medicine, Cardiology, and director of cardiac cathlabs, Washington Hospital Center, Washington, D.C “The PressureWire®Aeris system represents a true paradigm shift in our thinking about the accessibility of FFR.. The integration with our existing GE hemodynamic recording system means that traditional limitations of FFR measurements, including utilizing a standalone machine for calculation, are removed (St. Jude Medical and GE Healthcare announce worldwide market launch of wireless Integrated FFR solution 2009).” With the FFR results integrated into the existing physiological information archive, the new solution will be the only system on the market where the hemodynamic severity of coronary lesions, as measured by FFR, is documented together with other procedural data and blood vessel imagery, creating a more complete patient record (St.
Jude Medical and GE Healthcare announce worldwide market launch of wireless Integrated FFR solution 2009).

The image of the PressureWire®Aeris and GE Mac-Lab Integration showing Radi’s PressureWire®Aeris highlighted in the yellow circle (True FFR integration 2009)

"Combining the strength of GE's Mac-Lab hemodynamic recording system with the performance of Radi’s PressureWire®Aeris in the assessment of FFR has the potential to enhance clinical workflow tremendously," said Omar Ishrak, president and chief executive officer of GE Healthcare Systems. "We are pleased to offer a tool which enables the interventional cardiologist to guide coronary procedures with higher accuracy, improving long term patient outcomes and lower procedural cost(St. Jude Medical and GE Healthcare announce worldwide market launch of wireless Integrated FFR solution 2009)."The Mac-Lab FFR solution is available as an upgrade path to all existing GE Mac-Lab installations worldwide, as well as new installations. "The incorporation of FFR and PressureWire®Aeris into GE Mac-Lab is a major advancement as we work to make FFR standard of care in the interventional cathlab. With FFR available directly in the existing hemodynamic recording system the need for additional equipment is removed and the procedure setup is reduced to the flip of a switch," said Anders Qvarnström, vice president and general manager of the Radi Medical Cardiovascular Division in
Sweden. "FFR is a highly valuable clinical tool for the interventional cardiologist, guiding the PCI procedure for improved patient outcomes and lowered cost. The combination of our innovative wireless PressureWire®Aeris and the Mac-Lab FFR upgrade makes this tool readily available in a large number of cathlabs worldwide" (St. Jude Medical and GE Healthcare announce worldwide market launch of wireless Integrated FFR solution 2009). The collaboration will furthermore facilitate the alternative of upgrading to integrated FFR and wireless measurement on all GE’s current and new Mac-Lab IT systems (St. Jude Medical and GE Healthcare announce worldwide market launch of wireless Integrated FFR solution 2009).

As a result of entering into this collaboration, Radi has experienced and will continue to experience a sharp increase in the number of cathlabs in which their products were present. There was also an increase in the rate of adoption of the Frequency Flow Reserve procedure in hospitals and catheterization labs as all hospitals and catheterization labs where GE operated had now integrated Radi Medical’s PressureWire®Aeris system. The integrated systems would now be seen as the standard for measuring coronary lesion severity in the busiest cathlabs across the world. When asked about the exact number of new relationships that came about as a result of the new relationship with GE. Director of Business and Market Development answered.

I am not able to say but it will increase significantly. GE supplies and operates in hospitals where we do not operate. In these areas we will see an opening up of new possibilities to enter more hospitals quicker and easier for us but also for GE as we also operate in hospitals where they do not operate.

This rate of adoption among cathlabs where GE had its operations will subsequently have spillover effects on other companies that supply similar equipment to other cathlabs where GE Health care was not present. Companies like Phillips and Siemens that also operate in the same market as GE healthcare and therefore had similar needs for a seamlessly integrated FFR measurement system that would improve workflow in cathlabs where they operated. Along with the technical couplings, Radi and GE will work closely in coordinating marketing activities
related to the integrated systems. The following charts give an illustration of the impacts that the GE Healthcare collaboration had on Radi’s existing relationships.

Radi’s Network Context before the relationship with GE Healthcare

Radi’s Network Context after the relationship with GE Healthcare

Hospitals: - H

Ended Relationship

Existing Relationship

Affected Relationship

New Relationship
The St Jude Medical Acquisition
In December 2008 Radi Medical was acquired by St. Jude Medical, a larger medical company that develops medical technology devices and services that focus on treating, neurological and chronic pain patients worldwide. Headquartered in St. Paul, Minnesota in the US, St. Jude Medical employs approximately 14,000 people worldwide and operates in five main product areas that include; cardiac rhythm management, atrial fibrillation, cardiac surgery, cardiology and neuromodulation (Company Overview 2009). One of the main reasons behind St. Jude’s acquisition of Radi was due to that fact that both companies operated within the hemeostasis management business with St. Jude focusing on the implantation of a device that stops bleeding during certain surgical procedures while Radi Medical possessed complimentary external compression products that St. Jude did not possess (Tobias Tullberg May 2009). The acquisition was expected to accelerate the rate of growth of St. Jude Medical's cardiovascular division while at the same time benefitting customers, patients, employees and stakeholders of both companies. (St. Jude Medical Acquires Radi Medical Systems 2009). The acquisition was also anticipated to have positive results for Radi Medical. Thomas Engstrom, the then part owner and CEO of Radi Medical, stated,

"We are pleased to join with the industry leader in active vascular closure and a partner who shares our vision of developing innovative cardiovascular technologies that improve patient care. This transaction brings together complementary product lines and, through St. Jude Medical's sales and distribution infrastructure, extends our reach to even more physician customers for the benefit of the patients they help every day"(St. Jude Medical Acquires Radi Medical Systems 2009).

These excerpts express the main sentiments toward the acquisition as both parties were seen to enjoy mutual benefits from the new relationship where St. Jude Medical strengthens its homeostasis management business by becoming the proud owner of Radi Medical’s complementary homeostasis management technology. St Jude Medical would also claim ownership to just under seventy percent of the global market share in Frequency Flow Reserve. Radi, on the other hand, through St. Jude’s extensive sales force gains access to those markets where they were never present due to their limited market reach. The sales teams of the two
companies are now closely working together in order to get St. Jude’s sales staff familiar with the FFR procedure. Furthermore, the companies will work closely in integrating and developing their homeostasis management technology.

The new relationship with St. Jude Medical came however with some restrictions for Radi Medical and some of its existing and highly embedded relationships. One of these relationships even had to end due to competition issues between St. Jude and their existing partners. Two of these direct relationships that were most affected were; Radi’s relationship with Boston Scientific and the relationship with GE Healthcare.

If we remember that there are two techniques used for the severity of heart attacks, Frequency Flow Reserve (FFR) and Intravascular Ultra Sound (IVUS). The IVUS system was the more established system that was used in most catheterization labs while FFR is still relatively new for some interventional cardiologists. Furthermore, a large number of interventional cardiologists who adopt FFR may still want to continue using the IVUS technique for varying reasons. In these cases, Radi was at a disadvantage as they could only provide FFR solutions while its only competitor in the FFR business Volcano, provided both FFR and IVUS solutions to these physicians. This led Radi to team up with another company that provided IVUS solutions-Boston Scientific which was also a strong player in the Pacemaker market. Although this partnership was legally informal, the companies had a longstanding and close relationship that was mutually beneficial as they complemented each other in activities that they were unable to carry out on their own while making each other more competitive.

After the acquisition by St. Jude, Radi had to end this relationship with Boston Scientific due to the fact that Boston Scientific was one of St. Jude’s biggest competitors in the Pacemaker business. Marketing Director at Radi Iohn Ryott puts it like this:

“But now with the acquisition from St. Jude it’s kind of tricky because they might have another view of some of those companies.” “So that’s something we did but then St. Jude, they are a big time competitor with Boston Scientific on the pace maker side so they don’t like these guys at all”. “There are three big players on the Pace maker market there are Medtronic, Boston Scientific and St. Jude and the
other two Medtronic and Boston Scientific, it’s like swearing saying that to a St Jude person so those collaborations we don’t have any more. So now we’re kind of reevaluating all these things that we’ve done in terms of co marketing and the different projects we’ve had we might be a little bit refocused about that.”

The Pacemaker business accounted for approximately sixty percent (60%) of St. Jude’s turnover while the newly acquired pressure measurement business would account to about one percent (1%) of St. Jude’s annual turnover. St. Jude was therefore unwilling to risk its core product because of an informal relationship that one of its smaller sub units was involved in and Radi therefore had to end that relationship with Boston Scientific. Subsequently, if Radi wishes to continue being competitive among those physicians that require both FFR and IVUS then it has to find another non-competing partner who is known and trusted by physicians.

As mentioned before, the relationship GE Healthcare was initiated to create the only system on the market where the hemodynamic severity of coronary lesions, as measured by FFR, is documented together with other procedural data and angiographic imagery, creating a more complete patient record. At the same time this integration eliminated lengthy set up procedures as well as all the extra wires leading out of the sterile work area. GE Healthcare also operates in other fields including electrophysiology, an area that St. Jude Medical was also strong in. this time the relationship did not end but there some limits placed on how they shared information. According to Tobias Tullberg Director of Market development:

“We didn’t have to end the relationship but in certain respects we may have rendered our relationship with GE more difficult. GE and St. Jude are competitors within Electrophysiology and it was more straightforward and simpler when it was just Radi-GE as we were able to share more information with each other. With St. Jude in the picture we still have a good collaboration but we are more restrictive in sharing certain types of customer information as there may arise conflicts of interest.” (Original text in Swedish; see interview transcriptions Tobias Tullberg)

Radi continues its collaboration with GE Health care and will continue to see growth in the number of catheterization labs that it operates in worldwide. Its relationship with St. Jude will however continue to act as a support mechanism or barrier in its ability to operate in its
existing relationships and how it starts new relationships. The following charts give an illustration of the impacts that the St. Jude acquisition had on Radi’s existing relationships.

*Radi’s Network Context before the St. Jude acquisition*

*Radi’s Network Context after the St. Jude acquisition*

<table>
<thead>
<tr>
<th>Existing Relationship</th>
<th>Sales Units: SU</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Relationship</td>
<td>Ended Relationship</td>
</tr>
<tr>
<td>Resulting Connections</td>
<td>Affected Relationship</td>
</tr>
</tbody>
</table>
The theoretical hypothesis at the end of the theory section stated that: As an actor enters into new relationships certain positive or negative changes may occur in the scope of its network context. The findings from the case shows that these positive and negative changes presented themselves in both the number of relationships mutually profitable relationships that Radi was involved in as well as well as how; activities are linked, how resources are shared and how actors (Radi and its partners) share information with each other. As it relates to activity links, actor bonds and resource ties, we see that Radi’s preexisting relationships that are depicted above fill at least one of these functions and therefore qualify to be a part of the company’s network context. We can also see that these relationships would therefore have significant impact on Radi’s sales volume, profitability, technical development projects (Thilenius 1997 p. 9). It is also through these activities, actors and resources that the company’s network context
changes. It must however be noted that these new relationships were not seen to have an impact on Radi’s entire network context as the entire context was not studied. Despite this, the findings show how parts of the context are affected. We will now take a closer look at the elements within the affected relationships.

The first building block of business relationships is the bonds between actors. In the pre-existing relationship with Boston Scientific, we see that Radi had developed bonds that were not dependent upon contractual agreements but instead of trust and commitment. We could also see that actor bonds were present in the GE relationship as the companies have developed an open relationship where information could pass freely between the two parties. This free flow of information, regardless of the formal contractual agreement between the two was also based upon trust and commitment. The second building block of business relationships is the link in activities between actors. This is referred to as the connections among operations that are carried out within and between firms in networks and how mutual adaptations in activities take place between relationship partners. We can see clear connections in the operations between Radi and Boston Scientific where the companies complemented each other in carrying out both IVUS and FFR procedures at hospitals. The third building block of business relationships is the ties in resources between two companies. These resource ties develop as companies exchange or access each other’s resources in carrying out their activities, in the process often transforming and adapting existing resources and creating new resources. This definition perfectly defines the GE relationship as the resources of the two companies are integrated in order to mitigate redundant and time consuming activities such as equipment set up at hospitals.

From the case study we see that positive sentiments were expressed in the beginning of both relationships as each of the involved companies had high expectations. In the collaboration with GE Healthcare the focus was the optimization of activities in catheterization labs through the integration of the two companies’ mutually complementing resources. This has started to, and over time, will develop even closer bonds between Radi medical and GE Healthcare. Both parties were equally active and had equal levels of control over in the outcome of the collaboration. There was also quite an open and free flow of information between the two,
which made it easier for them to operate together. Finally, the relationship facilitated a more simplified workflow between Radi and its customers (Hospitals) as well as the development of other profitable relationships in the form of new customers for Radi.

The acquisition by St. Jude Medical seemed to have been one that was progressing quite successfully as the acquiring company have not made (or needed to make) any dramatic changes in the Radi’s structure or way of doing business. Here similar sentiments were expressed as Radi Medical would finally have (to some extent) stronger “financial muscle” and reach as well as the development of their hemostasis management technology as they would now be a part of a well established and world leading medical giant that operated in the same business and was committed to integrating and developing their hemostasis management technology. The acquisition also came at quite a convenient time for both of the companies but especially for St. Jude. Firstly, when the acquisition was made public in December 2008, Radi Medical had already done all the ground work for the collaboration with GE Healthcare. Continued growth, in terms of market reach and therefore sales were inevitable due to the fact that GE had such an extensive market reach. Second, the ground breaking FAME study that proved that the FFR Procedure was a superior procedure in measuring coronary lesion severity was just about to be published. The FAME study was published by the New England Journal of Medicine in January 2009 and outlined the following results; The FFR Routine significantly improves outcomes in patients, FFR guided interventions reduces all types of events (including death) by thirty percent 30%, FFR guided interventions lower costs without prolonging the procedure, and FFR guided interventions improve patients quality of life (Tonoine et. al. I 2009). This gave FFR and Radi extra clout among customers (hospitals) and competitors-especially those who used the IVUS procedure-, and St. Jude was to benefit from it all. From Radi’s perspective, St. Jude had the resources and “contacts” that that Radi needed to advance not only its FFR business but also its other business areas. In countries where healthcare was not administered by the state, different insurance companies and reimbursement organizations were responsible for paying doctors and medical practitioners for varying medical procedures. Previously, Radi has had a limited amount of success in securing the desired level of reimbursements for the FFR procedure. St. Jude on the other hand being the larger company
had its own division that was responsible for securing reimbursements for their procedures. Radi will now be able to benefit from that function and will have a greater impact on these organizations that are so integral in the sales of their products. FFR will also benefit from St. Jude’s vast network of sales units.

**The Impacts of the New Relationships**

Despite the fact that new relationship with GE Healthcare did not create any apparent limitations for Radi’s other relationships, the new relationship with St. Jude Medical did. Radi’s longstanding and close relationship with Boston Scientific though legally informal, was very close as they performed joint activities by pooling their resources and as a result have created bonds that have made them more profitable than they would have been without each other. This relationship, despite its significance for Radi’s FFR business was absolutely incompatible with St. Jude since St. Jude and Boston Scientific were major competitors in the Pace Maker market, a business area that is most vital for St. Jude. Radi therefore had to end the relationship. This had a dual effect on Radi’s network context. First, Radi lost its relationship with an important partner and second, it could subsequently lose those customers that they served in conjunction with Boston Scientific that require both FFR and IVUS. Radi’s relationship with GE Healthcare was also affected by the acquisition. Even though they didn’t need to end the relationship with GE Healthcare, the ease at which information was shared between the two was restricted as there were competition issues between GE and St. Jude in the electrophysiology market. Here we see some amount of deterioration in the bonds between these two actors especially as it relates to trust. This restriction will have subsequent effects on the extent to which Radi can develop through its relationship with GE Healthcare.

One of the major reasons why these drawbacks occurred in the St. Jude relationship was the fact that Radi entered into a relationship that was more hierarchical than symmetrical with Radi being at the lower end with very little influence on the overall strategy of St. Jude, multinational cooperation. There was also a disconnect between those core products that were fundamental in Radi’s core strategy and those product areas that were most important for St. Jude. The Frequency Flow reserve business is one of Radi’s most important product areas while St. Jude Medical was mainly interested in their hemostasis management technology. More over St. Jude
was not prepared to risk their Pace Maker business for a division that accounts for a miniscule percent of its turnover.

These advantages and drawbacks relating to Radi’s new relationships depict what happens within an actor’s network context over time as a result of doing business. As an actor enters into new relationships its existing network context will change in some way or another. Fundamentally Radi’s network context changed as the activity links, resource ties and actor bonds change between itself and those companies that are closest most important to it. An actor may have varying levels of control over the way in which its network context changes as a result of its new relationships. This level of control is greatly dependent on the type of relationship that it enters into and also, the complementarity of the network context of the new partner. The new partner’s network context will include its partners, third parties and competitors and. We can also see that the more asymmetrical the new relationship is, the more the weaker partner will need to adapt its network context (existing relationships) to meet the needs and or desires of the stronger partner. This can be seen in the St. Jude relationship where Radi had to make changes in its close and existing relationships-and therefore its network context-for the sake of its new owner. Conversely, the more symmetrical the new relationship is, the lesser the need for the parties to adapt their network context to meet the needs and or requirements of the other partner. This can be seen in the GE relationship where Radi did not have to make changes in its close and existing relationships-and therefore its network context-for the sake of its new relationship with GE Healthcare.

It must also be noted that Radi’s network context also includes actors that it shares no activity links, actor bonds or resource ties with but which it regards as important as they are critical to the sales of Radi’s products due to their close relationship with Radi’s customers, the hospitals. These actors include insurance companies and reimbursement bodies depending on the country in question. Here we can also see that even though an actor’s network context is seen as the part of the network horizon, which the firm considers relevant - and therefore all the relationships that it considers relevant - it does not mean that the actor has a close relationship with is able to influence all those firms within its network context. This can be seen in situations concerning reimbursement bodies and insurance companies in countries like the US that have a
pivotal role in the sales of medical devices since they are the ones who pay for the actual procedures that the devices perform. Even though they were of such importance, Radi had little success in influencing them in their favor.

**Conclusion**

The aim of the study was to see in what ways, the scope of an actor’s network context change as it enters into new relationships. This has been carried out by examining Radi Medical and its existing immediate relationships and how some of these relationships were affected as the company enters into new ones. A closer look was taken at the relationships’ key elements namely actor bonds, resource ties and activity links as these would be the main functions that would change in the relationships. These were examined as they are the building blocks of both Radi’s close relationships and therefore its context. Though different in nature, the two new relationships that were examined caused brought about varying degrees change in Radi’s network context. These included changes in the number of close relationships that exist within Radi’s context as well as, the ease at which Radi can operate within its network context. We can therefore say that new relationships can enhance or disrupt activities, bring actors closer together or farther apart, and strengthening or weakening resource ties. Through the relationship with GE Healthcare, processes in activities between Radi and hospitals were enhanced. This adds to the level of efficiency within the relationship and therefore in the network context. Radi have also gained new relationships with other hospitals as a result of the GE relationship. To this end, the sheer size of Radi’s network context has increased. Through the relationship with St. Jude Medical, the size of Radi’s network context has increased due to the different sub units within St. Jude that it is now connected to. There are however certain processes that that were negatively affected in terms of knowledge sharing with GE and joint activities with Boston Scientific.

The study points out a number of observations concerning business relationships and an actor’s network context. First, companies have varying levels of control over which relationships they enter into. At the same time they may have varying levels of control over the extent to which these new relationships affect some of their existing relationships and therefore their network
context. One can therefore say that no one actor is in control of its network context. Instead, an actor’s network context is dependent upon the compatibility of the different relationships that it enters into.

**Suggestions for Further Research**

The study has covered a number of factors that impact an actor’s network context and also some of the ways in which an actor’s context changes over time as it enters into new relationships. Though these findings shed some amount of light on the question at hand, a number of issues or questions have arisen out of the study.

The relationships explored at Radi Medical, are relatively new relationships that may in the long run have a different impact on the company’s network context than they have done so far. A study conducted over a longer period of time would therefore take into account these long term changes and is therefore recommended recommended. An examination of the different companies involved in the relationship would also add to the findings produced by the study. One may however need to take accessibility issues into account. It would also be interesting to see how companies cope with these changes in its network context as well as some of the financial advantages and disadvantages of network context changes.
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Interviews and Discussions
Ryott Iohn, Director of Marketing, Radi Medical, Interviewed March 2009

Svanerudh Johan, Product Manager, Radi Medical Written response to interview Questions May 2009

Svanerudh Johan, Product Manager, Radi Medical, Informal Discussions

Tullberg Tobias, Director of Business & Market Development, Radi Medical, interviewed March 2009

Tullberg Tobias, Director of Business & Market Development, Radi Medical, interviewed May 2009
Appendix 1: Interview Guide A

Prepared for: Radi Medical
Prepared By: Ryan Edmonson Master Student at the Uppsala University
Date: , 2009

Company in Focus: RADI

Introduction Questions

Would it be sage to describe your company as primarily a business to business or business to consumer company?

Which customer/company groups do you market/sell to?

Have the company always focused on marketing to these major groups from the very start If not, why the extension?

Business Network Questions

Who does your primary customer group consist of; Hospitals, Medical Practitioners etc?

Which other groups affect the purchase of your products

Which other groups have a direct impact on the development of your products. How?

Which other groups have a direct impact on the distribution of your products. How?

Which (target) group/s fills the following functions when purchasing your products?

- Payer
- Buyer
- User

Consumer marketing Questions

How much does St. Jude engage in consumer marketing activities?

This includes advertising to consumers, forming or being engaged in consumer/social communities?

What is the role of consumer marketing in such a case?

Does St. Jude use social groups as a support function for industrial marketing?

What are the key issues that one needs to consider when starting a social community for medical purposes?
Appendix 2: Interview Guide B
Prepared by: - Ryan Edmonson

Radi’s collaboration with GE

Why did Radi Medical choose to enter into collaboration with GE?

How did you perceive GE (in relation to its technological and market capabilities for example) before

What were some of the main benefits that were expected prior to the start of the collaboration?

Have you gained any new relationships (customers or other collaboration partners) as a result of the GE collaboration?

What was the extent of your knowledge about GE (regarding its compatibility to Radi) before the collaboration?

Did/will any of your current relationships end as a result of your GE collaboration?

Radi’s Acquisition by St. Jude Medical.

What were some of the main benefits that were expected after Radi’s acquisition by St. Jude Medical?

Have you gained any new relationships (customers or other collaboration partners) as a result of the GE collaboration?

What was the extent of your knowledge about GE (regarding its compatibility to Radi) before the collaboration?

Did/will any of your current relationships end as a result of your acquisition by St. Jude Medical GE collaboration?

Radi’s FAME Study Results

What were the main reasons for conducting or sponsoring the fame study?

What major market changes has FFR experienced since the publishing of the fame results?

What were the perceptions of most interventional cardiologists before the publication of the fame study results?
What were the perceptions of most interventional cardiologists after the publication of the fame study results?