Augmentation of innovations in dyads through risk-taking – a conceptual study with cases

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ABSTRACT

A culture supporting innovative behaviour and risk-taking can be a strategic capability that generates a sustainable competitive advantage in a dyad relationship. Avoidance of risk-taking with new innovations can lead to strategic simplicity: practices that functioned well previously are used incessantly despite the strategic requirements. The topic of this study is scantly explored in the extant literature. Thus, this study's purpose is to identify relevant concepts and to create a classification method for dyad relationships Multiple case study and domain modelling methodologies are used to examine seven dyad cases. Each of the seven cases is analysed in order to find relevant concepts related to the problem domain, and then the connections between the applicable concepts are discussed. This study presents several new concepts from the risk-taking and innovation perspective that are applicable in dyad relationships. The relevant concepts are employed to create a fourfold table, and then the table is demonstrated with the seven cases. The implication for the extant literature is discussed, and further studies are proposed. This is one of the first studies in this topic.

Keywords: Innovation, dyad, risk-taking, concepts and problem domain

INTRODUCTION

The importance of creating an innovative culture is discussed by several scholars: For example, Van de Ven (1986) discusses the importance of an institutional leadership in order to establish a culture milieu that encourages innovation and builds structures to enable creative thinking. According to Van De Ven, the creation of such an environment can be pursued through four factors: 1) an organisation's mission; 2) instilling purpose into an organisation's structure and systems; 3) defending the institution's integrity; and 4) ordering internal conflict. Argyris and Schön (1996) discuss the value of double-loop learning in creating an innovative culture in a company: debating, communicating and disagreeing challenge existing rules, norms and values, and thus bring the innovation forward. Institutional leadership implies instilling such an environment through clear goals, rules and company mission, while accepting the uncertainty and tension that encourages creative behaviour. This could mean working with the possibility of taking risks.

The importance of risk-taking is also discussed by several scholars: Organizational culture can be a strategic resource that generates a sustainable competitive advantage by promoting learning, risk-taking, and innovation (Zahra, 2004). Based on the literature review, owner-managers need to create an environment that welcomes and promotes calculated risk-taking (Bass and Aviola, 1993; Zahra, 2005). The avoidance of risk-taking can lead to strategic simplicity; routines that worked well in the past are used again and again regardless of the strategic challenges (Zahra, 2004). In the literature, the need for an entrepreneurial atmosphere in large enterprises is highlighted (Drucker, 1985).

The creation of an innovation ethos across company borders supporting entrepreneurial behaviour and related risk-taking has not been discussed widely in the literature: for example, Powel et al. (1996) debate the meaning of organisational learning in business networks, but hardly mention how the risk should be considered; Björk and Magnusson (2009) conclude that network connectivity is important for the quality new business ideas, but risk topics related to these are not discussed. This study aims at gaining further understanding and fulfilling this research gap on the topic by conducting a conceptual study based on the seven short examples from various sources.

As risk taking is considered to be an important part of pioneering behaviour in companies, this paper focuses on how this topic should be further discussed within the business network context. In this phase of the study, an understanding of how the risk taking is visible in dyad relationships is tackled, before extending the research to business networks. The research questions of this present paper are as follows: What are the concepts needed for future research? How can dyad relationships be classified by risk-taking? What further research could be done within this area?

This research is inspired by literature on innovative risk-taking environments (Zahra, 2004; Van der Ven, 1986; Argyris and Schön, 1996) and by the study of Gosselin and Bauwen (2006) on strategic account management. This study applies extant business networks studies, and is limited to the dyad relationship. We employ Domain Modelling method (Sommerville 2004; Pressman, 2004) for identifying concepts from the stories, and then the found concepts are then further discussed in the light of the extant studies. The identification of the concepts first related to the problem domain creates the solid argument why the selected concepts are needed to be discussed. Thus, first, the topic is flavoured through examples, before each case is analysed to identify concepts related to the problem domain. And then, the subject will be

linked to Industrial Marketing and Purchasing (IMP) studies to further discuss of identified concepts and the problem domain, and what further research can be done. The journey begins with a discussion on the methods used in this study.

METHOD AND DATA

A method was presented by Ruokolainen and Mäkelä (2007) in identifying relevant and missing concepts in order to boost discourse. It provides an innovative angle to this study and is helpful in constructing a deeper body of knowledge for the area of the risk management in dyad relationships. To focus on describing concepts and constructing the domain model is a means of approaching the ontology of the problem area. Ontology is referred to here as the computer science term, which is derived from the same origin as the philosophical term. In computer science use, the term ontology refers to a set of representational expressions that characterise concepts within a domain and the relationships between these concepts. Gruber (1995) describes ontology in knowledge engineering as an explicit specification of conceptualisation, stating that what "exists" is that which can be represented.

Ruokolainen and Mäkelä (2007) describe that in the process of engineering, requirements for large-scale information systems that map key concepts and their relationships are proposed, such as state transition diagrams, dataflow diagrams, and domain models. They argue that producing these diagrams can bring a better understanding of the problem domain also in social science. Domain analysis and modelling are used in producing models that include concepts of that specific problem domain in the form of classes, attributes, and relations. The domain modelling technique can be compared in some extent to the grounded theory approach as presented by Glaser and Strauss (1967). For instance, one of the ideas in the grounded theory approach is to study field notes and discover categories, concepts and properties, as well as their interrelationships.

Building a domain model is discussed by Sommerville (2004) and Pressman (2004). In their view, a problem domain includes real-world concepts about the issue. The building blocks for a domain model are identified with the help of example case stories that relate to the problem domain. Candidates are concrete real-world things that can be conceptualized. After identifying the concepts the knowledge of the concepts and the related problem domain are deepen with the help of the literature study. By identifying first the concept from the case stories we create a solid based to the further discussion of topics related to the concepts. Those concepts and real-world things that are redundant, vague, or represent meta-language or describe operations, and do not belong to the research field, should not be considered. In its simplest form, a domain model introduces the vocabulary of the problem area. This paper describes these concepts and their relationships by employing contemporary methods used in science such as written descriptions, tables and fourfold tables.

The inductive multiple case study research methodology is also used to examine seven cases. The cases represent the problem area in different areas of the business and technologies. In the selection of the cases, sampling methods were well in line with the description in Eisehardt's article (1989). The aim of sampling is to study the replication of the concepts in different types of cases. The sample selection rested on literal replication logic (Yin, 2009). The variation of the cases was employed to ensure that results can be considered to be applicable to a larger number of companies than in the sample. The seven cases used in this study can be found in Table 1. After identifying the concepts the knowledge related to concepts are deepen with the literature study on the concepts.

Inset Table 1 near here

The idea for the first case was picked from a television program, in which the owner and founder, Marja Kurki, of the company explained the start of her business. The topic was further investigated by looking for the material from different sources. The second and the third cases were picked from a company, Nokia Siemens Networks, which produces telecom devices for global markets. The first author of this paper worked with these cases and thus was familiar with their case history. The fourth, fifth (Uusitalo, 1995), and sixth (Uusitalo and Grønhaug, 2008) cases are based on previous studies of the second author. The seventh case was written based on related articles in newspapers.

CASES

The first case – western silk products: The first case – western silk products: Marja Kurki is a company that produces silk scarves and ties for consumers. Its sales exceeded €30 million in 2011, coming from Europe, China and Korea. In a TV program, Ms. Marja Kurki, who named the company after herself, described the start of her career as an entrepreneur setting-up a start-up company about 30 years ago. At that time, she had strong vision of the need for colourful western-style silk clothes. The vision turned out to be an innovative business model. For her first designs she needed to important silk fabrics from a silk fabric producer which was in China. She was not able to get a small quantity of a silk fabric to produce a small test batch from her start-up company's silk supplier, but was required to order a large amount of the fabric. The Chinese manufacture didn't consider her proposal to produce small batches of silk for her needs. Their factories were designed to produce large batches of silk fabrics. This would have caused her company to go into bankruptcy, if a disaster had occurred at market entry. However, Marja Kurki's vision turned out to be an innovative business model. Marja Kurki is today a company that produces silk scarves and ties for consumers.

The case described how the start-up company needed to take a risk before entering the market. However, it told also about the relationship with a Chinese silk fabric manufacturer. The manufacturer was not ready to take risks, despite its new customer presenting an innovative business model at that time. It can be concluded that the supplier was risk averted and unwilling to change its processes for an unknown and risky start-up. The customer instead was ready to take a risk and, therefore, the customer was risk favoured. This dyad relationship can be called a 'captive relationship' or 'customer risk-taking driven relationship', because there may not have any alternatives; either they enter the market with their own risk or they do not take the risk at all.

The second case – information system access: The following two examples are related to the use of technology. Nevertheless, they give an overview of how the related risks were dealt with. Nokia Siemens Networks is a multinational company, established in 2007 from Nokia Networks and Siemens Communication. A supplier of Nokia Siemens Networks proposed to use its system, which was developed for IT shopping, to allow visitors to access the Internet. This idea was further enhanced by copying a concept used by Nokia. Nokia Siemens Networks' IT department was unwilling to take a risk allowing third-party users access to the Internet, although its risk was considered minimal. They considered that there were possibilities for misuse although similar already existed, for example in Internet cafes.

In this case, the customer was finally unwilling to take a risk to apply the solution that was further developed from the proposal of a supplier. The customer, Nokia Siemens Networks, in this case can be regarded as risk averted. This kind of dyad relationship can be called 'Supplier risk-taking driven relationship', meaning that a supplier takes all the needed risks. In an extreme case, a customer could use its position to squeeze extra benefits or information out the supplier without any intention of cooperation.

The third case – a chat system: Another example from Nokia Siemens Networks was generated through a joint innovation campaign with one of its supplier. One of the ideas was to create cross-organisational chat functionality to ease day-to-day communications between the customer and the supplier in question. A successful implementation was finally achieved incrementally by using ideas from both sides of the relationship. In this case, both parties were ready to renew the way they operate and take risks related to the new technologies. This kind of dyad relationships can be called 'business-opportunities driven relationship' or 'opportunities driven relationship'.

The major problems for the implementation of a cross-functional chat system were caused by the technology providers', Cisco and Microsoft, dyad relationship. Nokia Siemens Networks used Cisco's technology and the supplier used the technology of Microsoft. Plenty of the time was used to bridge the discussion between these two parties, instead of discussing them directly. The problems concerned the incompatibility of technologies. Finally it was agreed to use Google's chat system, which was known to work together with Cisco's WebexConnect. The latter part of the case makes it visible how risk-taking can dependent on third parties: the phenomenon can be called dependent risk-taking.

The fourth case – active loud speaker: In the mid-1970s, the Finnish Broadcasting company YLE was building a new radio house in Helsinki. Juhani Borenius, who then worked for YLE as an acoustician, asked his friends, Ilpo Martikainen and Topi Partanen, at a postgraduate acoustics seminar if they could design an active monitoring speaker. It was already known that Martikainen had designed loud speakers and stereos. First, Martikainen and Partanen, the later founders of Genelec a now globally known professional active monitoring speaker manufacturer from Iisalmi, Finland, asked what was needed and then two weeks later they had the first prototype sample. The prototype was far from the perfect speaker, but promising enough to raise serious interest within YLE and elsewhere. In early 1978, after two years of thorough R&D work in co-operation with YLE, the first speaker was ready. At that same time, the company to manufacture the speakers was founded. In April 1978, YLE made an order of 340 speakers from Genelec. YLE paid one third of the purchasing price when the order was placed: However, YLE required bank collateral for the prepayment from Genelec. The local bank also took a risk by proving the bank collateral. (Genelec 2008:11-13, Uusitalo, 2013).

In this case, both parties were willing to invest in the relationship and the risks were shared between the parties, and even between the supplier and their bank. This relationship can also be defined as 'business-opportunities driven relationship'. YLE co-operated with Genelec after a prototype was introduced and also took a risk by ordering the speakers. Martikainen and Partanen started the co-operation without knowing if any orders would be introduced by YLE. Genelec was established just before the order was introduced. The bank involvement as a risk-sharer exemplifies that a risk can be recursively shared further in that partner's network. It can be called as 'recursive risk-sharing' in the business network context.

The fifth case – float glass for safety glass: In the 1950s, Pilkington, a UK-based flat glass manufacturer, developed a new method of manufacturing high quality flat glass so-called 'float glass' to replace plate glass. The difficulties and costs in the production of plate glass were well known in the industry. The fixed capital costs of electric motors and machinery were enormous. The running costs were also considerable. The plate glass line was also noisy and it provided a lot of dirty grinding powder. Pilkington wanted to test the new float glass as the raw material for safety glass without anybody knowing. Here, they had problems. It was difficult to sell large amounts of float glass to save money, and test acceptance without premature fuss. On this, Pilkington approached some of their good customers and, with the help of Triplex Safety Glass, Pilkington gradually introduced float glass as a safety glass (and to the car manufacturers) without anyone knowing the difference. The float glass process was announced to the world in January 1959. "One thing we were good [at] was security," said Sir Alastair Pilkington, the inventor of float glass. "People easily fail to understand that the greatest secret about a new process is not how to do it, but it can be done". The process was a complete surprise to the industry (Uusitalo, 1995).

The market entry risk was minimised as the new material was tested in silence. If the test had failed, it would have revealed that the ordinary glass process had problems and that the problems had been fixed by now. In this case, the risk-taking was hidden from the market. It illustrates one nature of the risk-taking – risk-takers might not be willing the share of their plans to any third parties. In this case Triplex Safety Glass took the risk and they tried minimised the impact of the possible failure. This dyad relationship can also be categorized under the heading 'customer risk-taking driven relationship'

The sixth case – Benecol: The cholesterol-lowering effect of plant sterols was known as early as the 1950s, and since that time scientists all over the world have studied plant sterols and their properties. In the late 1980s, Raisio, a small Finnish food manufacturer, developed a manufacturing process to turn plant sterol into fat-soluble stanol ester, suitable for food production. In 1993, the manufacturing process was developed. The findings of the three-year clinical stanol ester study were published in a prestigious scientific journal in 1995. At the same time, the first product, Benecol margarine, was launched in Finland. Soon expectations for Benecol grew. The Times wrote about Mr Wester, the inventor of the manufacturing process, as "the man whose pot of gold could save millions of lives". The limited production capacity of the raw material was a bottle neck. In the spring of 1997, Raisio was overwhelmed with co-operation offers coming from all over the world. The company was in doubt about whose offer to accept. International press followed Raisio and Benecol very intensively. In 1997-98, Raisio signed an agreement with the US-based Johnson and Johnson group; first for North America and then worldwide. Johnson and Johnson is the world's biggest producer of health-related products; with a turnover of $22 billion in 1996 and 170 operative companies across 50 countries The company got the sole right to use the Benecol trademark and patents in global markets. Raisio kept the entire production of raw material in its own hands and developed the Benecol production and marketing in Finland and neighbouring areas. Raisio's business model of licensing Benecol included: 1) a modest lump sum; 2) royalties; and 3) the sales revenue of the sold ingredient. In 1998-1999, Raisio built plants in Finland, Chile and the US, to supply enough raw materials. Global marketing took place through their strong and skilful partner. Johnson and Johnson introduced the first products in spring 1999, one year later than planned. Later on, the worldwide agreement was cancelled. Johnson and Johnson take care of only certain markets. Raisio has taken responsibility of many markets and it co-operates directly with food manufacturers (Uusitalo and Grønhaug, 2008).

In this case, the supplier, the company Raisio, took all the financial risks based on the expectations of high revenues. The customer, Johnson and Johnson, did not need to share risks because of the one-sided licensing agreement proposed to the company by Raisio. Raisio probably believed in the power the new invention, Benecol, after its introduction won vast amount of publicity. Through this case, it is seen that risk-taking can be driven with a vast amount of hype, meaning that one of the parties takes a risk not related to real value of the innovation. This dyad relationship can also be called 'Supplier risk-taking driven relationship' as the supplier takes all the needed risks.

The seventh case – Pendolino Train: Over the years in Italy, various possibilities for fast trains have been explored. The first working prototype, christened Pendolino, using a tilting car body, was introduced by Fiat Ferroviaria in 1969. A whole Electric Multiple Unit (EMU) with four cars was built in 1975. The train was more or less a travelling laboratory for the new technology. In the 1980s, patents were acquired for the tilting bogie and other improvements, which led to the more advanced ETR 450, the first Pendolino to enter regular service. ETR 450, with an eight-car configuration, could run at speeds up to 250km/h. In 1993, the ETR 460 began its service. Its bogie-to-body connection was extremely simple and easy to make, with clear advantages for maintenance. For safety and comfort reasons, maximum tilt was 8°. ETR 460 keeps aluminium extrusion technology axle load to an extremely low level to allow the train to take curves up to 35% faster than conventional trains on ordinary rails. However, ETR 460 was built in only 10 units. A total of 34 EMUs of the ETR 460/470/480 series were built by Fiat Ferroviaria until it was sold to the French Alstom in 2000.

By 1990, VR Group, at the time called Finnish State Railways, decided to acquire fast trains. In 1992, it bought two proto units and had an option for 16 more units. The Finnish model, Pendolino 220, is based on the ETR 460 but was adapted to the specific requirements of VR Group and to the cold climatic conditions. The first two units were assembled in 1995 by Rautaruukki-Transtech. Eight units were purchased from Fiat in 1997 and in 2002 eight additional from Alstom. All units were delivered between 2000 and 2006. The trains are composed of six carriages. Each train has a maximum speed of 220km/h. Pendolinos in Finland have received a lot of bad press for their reliability issues, mostly caused by technical problems with the tilting system and couplers. All units will go through an extensive maintenance cycle between 2012 and 2014.

Fast trains usually need special rails, as in the French TGV's case. However, Pendolino was one of the few trains that did not need new rails: Fiat Ferroviaria was basically the sole supplier of such trains. The other possible train supplier could have been ABB (Asea Brown Boveri), a Swedish – Swiss conglomerate. The VR Group was in the situation that it needed to acquire fast trains and it took a risk in buying Pendlinos, based on ETR 460 that was still a prototype. In this case, the customer carried the risks and the supplier minimised its risks. Thus, this dyad relationship can also be proposed to be a 'customer risk-taking driven relationship'. In this case, the supplier most likely knew its position as a sole supplier of the technology and used its power in the negotiation. This is also an attribute that can be associated in dyad relationships in which risk-taking is needed to decide. This dyad relationship can also be called 'customer risk-taking driven relationship'

CASE-WIDE CONCEPTS, VARIABLES AND ANALYSIS

The intention is now to describe the case-wide concepts, as well as the key related variables for classification of dyad relationships. All seven cases are employed to gain a deeper understanding of the concepts and attributes, and to create a classification system.

The first concept, as well as a variable, concerns the customer's readiness to take risks in a dyad relationship. In the first case, the customer was ready to take a significant risk and thus it can be said that its risk-taking readiness was high. In the second case, the customer was unwilling to take a risk and thus the company risk-taking readiness was low. This variable can be called Customer Risk-Taking Readiness (CRR). It can be argued that in the partnership mode, where trust is expected to be in place, customer risk-taking readiness is higher. Therefore, it can be further argued that CRR is partnership driven.

The second concept, as well as the related variable, concerns a supplier's readiness to take risks in a dyad relationship. In the sixth case, the supplier was ready to risk and to pay all related cost, and, therefore, its risk-taking readiness can be regarded high. In the first case, the supplier was not ready to take any risks, and therefore, the supplier's readiness to take risk was low. This variable can be called Supplier Risk-Taking Readiness (SRR). The motivation for the risk-taking capability of the supplier could be the business opportunity available. If the opportunity can be regarded as rewarding, the supplier will be more willing to take risks. Thus, the SSR can be regarded to be opportunity driven.

The product of these two variables describes a dyad relationship's risk-taking capability (DRRC). The classification of the relationships is described in Figure 1. With the help of the variables, the fourfold table (see Figure 1) can be formed as described. The fourfold table includes the following quadrants: Transactional Relationship, describes the cases in which neither of the parties is willing to take risk; Supplier Risk-Taking Driven Relationship, describes that only the supplier in a dyad relationship will take risks; Customer Risk-Taking Driven Relationship, means that the risks are more or less solely taken by a customer; and Business-Opportunities Driven Relationship, means that the risks are shared in the dyad relationship. The seven dyad cases described previously can be located easily in the fourfold table based on the discussion in each of the case: the cases one, five and seven are customer risk-taking driven relationships; the cases two and six are supplier risk-taking driven relationships; and the cases three and four are opportunities driven relationships.

Insert figure 1 near here

In order to complete the study on the fourfold table, the strategic movements will be discussed briefly. In this context, it can be generally said that companies make their strategic movements based on their own status and their relationship with a supplier. Basically, the unstable situations exist in the up-left corner and the low-right corner. The unstable situations represent possible business discontinuance points. The possible options that companies can do in these cases are listed below. There three options for the down-right corner as follows:

1. As in the Marja Kurki company case, companies can accept the situation and take an extra risk of facing insolvency. This means that there is no immediate change in a dyad relationship. In long run, the relationship can be switched to transactional.

2. The other option is to end the existing dyad relationship with the supplier in question and to find a new supplier with which a mutual risk-taking relationship can be built. In this case, the switching costs should be considered.

3. One of the options is make a relationship-building effort to reach mutual benefits, if the risk taking is too unstable to be considered. This proposes that the relationship is switched to be in the upper right corner.

In the case where the supplier is willing to take risks, but the customer is not, the options could be:

1. The supplier can terminate the trial to build a partnership with the existing customer and search for a new customer.

2. The supplier can try to further negotiate and invest in the relationship to gain an improved position. The aim is to change the relationship to offer business opportunities for both side.

3. The supplier can accept the situation and not search further new opportunities. The relationship in long run is needed to be switched to transactional.

DISCUSSIONS ON LITERATURE AND FURTHER STUDIES

According to Gosselin and Bauwen (2006), the commitment level of a relationship can be measured by two variables named Relationship Proneness and Competence Development Proneness. These variables are proposed to indicate the performance of account management (Gosselin, 2012). They measure to what degree the two parties are committed to each other. The commitment to each other is called Strategic Congruence. This study discusses how much each party in a dyad relationship is willing to take a risk in order to gain potential business benefits. Therefore, we measured CRR and SRR in a dyad relationship. Using Gosselin and Bauwen's (2006) variables, this study's variables measured the commitment but from a different perspective: the mutual commitment to the potential of future businesses rather than the current relationship. We propose to name the product of these two variables as Risk-Taking Congruence.

Gosselin and Bauwen (2006) divided the commitment level into four categories: Key Account; Strategic Account; Transactional Account; and Captive Account. The Strategic and Transactional accounts are stable, as variables have the same status in these quarters in the matrix. The authors propose that the two other accounts are unstable, as either the customer or the supplier is not committed to the dyad relationship. In this study, we have divided the dyad relationship into the following categories: Business-Opportunities Driven Relationship (BODR); Transactional Relationship (TR); Customer Risk-Taking Driven Relationship (CRTDR); and Supplier Risk-Taking Driven Relationship (SRTDR). We share Gosselin and Bauwen's view of the instability of a relationship if one of the parties' commitments is missing. In the Business-Opportunities Driven Relationship, mutual commitment to take a risk exists. Both sides see a business opportunity and they both are willing to commit to taking risks. We named the lower-left corner as Transactional Relationship, as neither of the partners proposed risk-taking.

According to Håkansson (1987), innovation is interplay of knowledge between the actor's ability to apply that knowledge in practice, using the knowledge by mobilizing resources, and coordinating these resources between actors with an efficient combination of firm-specific technological capabilities. However, taking risks and sharing risks can be a quite important part of the innovation process. Håkansson's (1987) definition of innovation does not describe

how companies agree to the employment of these resources and capabilities, which can include taking risks alone or sharing them. In general, in the Industrial, Marketing and Purchasing field the focus of the studies have been on how to acquire, manage and develop technologies within the framework of permanent business relationships (for example, Ford et al., 2002). We would like to propose that innovation definitions should also have an element concerning capabilities of taking risks, sharing them and agreeing related profits in a business network. A good example of this is risk sharing in a business network situation, where the companies agree about the fair share from the market price for each other, which is used in a Japanese Keiratsu model. The other option is that every actor adds its own costs on the top of others' costs and, thus, out-prices the innovation from the market. The risk-taking in a network can be called business networks' innovation, as the shared risk-taking is an essential part of the new business created.

Risk-taking readiness can be related to informal and formal cooperation. Informal cooperation is based on trust developed through social exchange. This can be attained only over time, where the parties experience that the other party is trustworthy. In the case where both parties trust each other, risks can be assumed to be shared more easily. In informal cooperation, business comes first and visibility later if ever, whereas in formal cooperation, visibility comes first and business later, if trust can be developed. Formal cooperation does not always lead to real cooperation, and real cooperation is often not visible. Informal cooperation is developed by those who are directly involved in the business exchanges between companies, such as line managers at the middle organisation level. Formal cooperation, on the contrary, is usually established at higher management level (Håkansson and Johansson, 1988). In formal cooperation, the parties are interested in illustrating the presence or intended presence for the counterpart.

Can risk sharing is also difficult in a formal relationship? Can formal relationships focus solely to minimise risks? The messages of formal cooperation can also be directed at competitors ("this market is not for you"), suppliers ("supply us; we are the leaders") or suppliers of complementary products ("our system are worth developing"). Similar remarks can be aimed at other stakeholders. Informal cooperation is used when the parties are interested in business with the counterpart's network without visibility, which may prevent potential moves by competitors. Companies with a strong position usually use formal cooperation, while weaker companies seek informal cooperation. Seeking the strong position can lead that counterparty to take all the risks. The informality and formality of the relationship could be considered for further research. In the cases in this study, it was seen that the either a supplier or a customer took risks unilaterally, which lead to failures in practice (see example cases 6 and 7).

Webster (1992) has discussed the range of a marketing relationship. He divides the evolution of the relationship into seven phases. It would be interesting to study if risk-taking would have any effect on the speed of the evolution of the relationship from the Markets and Transactions phase to the Buyer-Seller Partnership phase as described by Webster. Figure 1 might also describe the maturity of the relationship, for example, in the early phase the relationship is transactional, as Webster also describes. The present study also further contributes to discussions on the development of the Buyer-Seller Relationship (Ford, 1980). One of the variables related to the development of this relationship concerns uncertainty in the relationship: the uncertainty indicates that either seller or buyer or both ones need to take risks. As in the active loud speaker (case 4) case, both sides were willing to take a risk at the

start of the relationship, and thus they passed several phases of relationship building. The phenomena can be called Risk-Driven Evolution of the dyad relationship.

A previous study (Ruokolainen, 2008) proposes that start-up technology companies create a significant risk for their customers if they deliver complex products to the business-to-business market. Start-up technology companies employ their existing relationships to find their first customers. In the active loud speaker case between YLE and Genelec, the importance of the previous relationship was clearly visible. This observation could generalise that overall the existing relationship can be used for gaining mutual commitment in case a risk needs to be taken. Several questions can be raised: What is behind this phenomenon? Are risks lowered if a personal level of trust exists? Further studies could explore these.

The termination of business relationships has received considerable attention recently (Alajoutsijärvi et al., 2000; Gedeon et. al., 2009; Havila and Tähtinen, 2011; Tidström and Åhman, 2006). The reasons for business relationships to end vary greatly. We identified the inability to take risks as a potential reason for relationship termination. However, the risk or the inability of taking risks has not been mentioned in the relationship ending literature. The present study suggests this as one reason for business relationship termination. On the other hand, what keeps a business relationship alive? Is it the ability to take risks?

Previous studies propose that managers in established companies are risk averse, while entrepreneurs are risk-takers and innovators (Busenitz and Barney, 1997). Based on that, a study could be conducted on whether business networks that mainly consist of big companies differ from networks that consist mainly of small companies, from the perspective of risk-taking. In other words, can it be concluded that entrepreneurs who have networked with each other produce more innovative solutions, than their counterparts in the large enterprises? Drucker (1985) states that while many of the major innovations have not come from big companies those organisations still have a significant role to play in developing technologies. Larger companies might have tendencies for more formal cooperation than SMEs: it might mean that the networks consisting from small companies are more innovative. This phenomenon can be called Risk Intensity of the Business Network.

Number of the concepts related to risk-taking identified by this study like Dependent, Recursive and Hype Risk-takings have been addressed scantly by the literature. However, in general level, for example, Zahra (2006) proposes that incompetence in risk-taking can lead to strategic simplicity. It is assumed that the transactional relationship could die as there are no forthcoming opportunities to feed the businesses. This was also found by Araujo et. al. (1999). Future qualitative studies could concentrate on how the risk-taking culture affect profits of companies in the different categories proposed in Table 1. Do those dyad relationships that rely on mutual business opportunities produce more sustainable incomes in the companies than the others in the quadrant?

CONCLUSION

The research question was raised: what the concepts would be needed for further studies? This study was able to identify a number of concepts related to the current research topic and thus it clears the problem domain (see Table 2). The literature was reviewed and an extension to the existing research concerning dyad relationships was proposed. In the analysis of the concepts illustrated by the sampled cases, this study able to demonstrate the common concepts across the board by creating a fourfold table. It explained the table's axis and the

meaning of the each quadrant, and was able to locate the cases in the matrix through careful analysis. This paper proposes a number of studies that concentrate on creating new knowledge on the top of the existing research. The following table (see Table 2) illustrates the proposed concept, source of them and if and how they are addressed in the literature.

Insert table 2 near hear

The Table 2 shows that there are number of concepts that are scantly discussed on in the literature related to this study's problem domain, and discussion part of this paper identified research gaps in the current literature in this study's topic. The concepts and analysis method proposed here need further investigation and development. It is important to understand how risk-taking to related innovation can be further studied systematically in business networks especially to make networks innovative. Our study paves the way for the further studies of this under-researched topic.

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Table 1: Case

Case	Industry Type	Customer/Supplier	Type of Companies
First Case: Western Silk Products	Textile	Marja Kurki/Silk Fabric Producers	Start-up Established Enterprise
Second Case: Information System Access	ICT	Nokia Siemens Networks/Service Provider	Established Enterprises
Third Case: Chat System	ICT	Nokia Siemens Networks/Service Provider	Established Enterprises
Fourth Case: Active Loud Speaker	Electronics	YLE/Genelec	Established Enterprise Start-up
Fifth Case: Float Glass for Safety Glass	Glass	Major Car Manufacturers/ Triplex/Pilkington	Established Enterprises
Sixth Case: Benecol	Food Industry	Johnson and Johnson/Raisio	Established Enterprises
Seventh Case: Pendolino Train	Railway	Finnish Railways VR/Fiat Ferroviaria	Established Enterprises

Table 2: Identified concepts

Concept	Source	Discussion in the literature
Customer Risk-Taking Readiness	Cases 1 and 2	Gosselin and Bauwen's (2006)
Supplier Risk-Taking Readiness	Cases 2 and 6	Gosselin and Bauwen's (2006)
Transactional Relationship	Gosselin and Bauwen (2006)	
Supplier Risk-Taking Relationship	Case analysis of this study	Gosselin and Bauwen's (2006)
Customer Risk-Taking Relationship	Case analysis of this study	Gosselin and Bauwen's (2006)
Business-Opportunity Driven Relationship	Case analysis of this study	Gosselin and Bauwen's (2006)
Dependent Risk-Taking	Case 3	Not addressed directly; risk taking in discussed Zahra(2006)
Recursive Risk Sharing	Case 4	Not addressed directly; risk taking in discussed Zahra(2006)
Hidden Risk-Taking	Case 5	Not addressed directly; risk taking in discussed Zahra(2006)
Hype Driven Risk-Taking	Case 6	Not addressed directly; risk taking in discussed Zahra(2006)
Sole Supplier Driven Risk-Taking	Case 7	Discussed by purchasing literature
Informal or Formal Relationship	Case 5 and 7	Håkansson and Johansson
Risk Driven Evaluation of the Relationship	Case 4	Ruokolainen (2008)
Risk Intensity of the Network		Drucker
Risk -Taking Congruence	All cases	Gosselin and Bauwen (2006)
Dyad Relationship's Risk-Taking capability	All cases	Håkansson and Johansson, 1988;

Risk-Driven Evolution of the dyad relationship	Case 4	Ford, 1980; Webster, 1992;

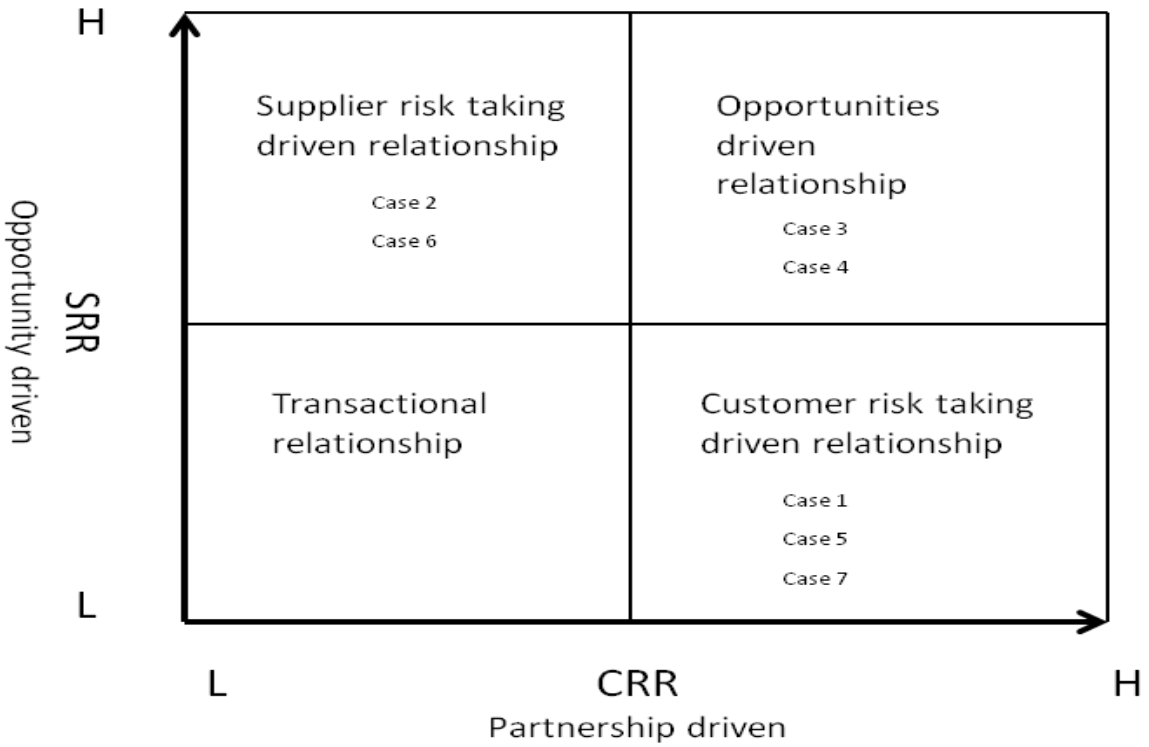

Figure 1: Fourfold table to classify the dyad relationship readiness for risk taking