Strategic alliances for innovation

Conditions and recommendations to improve innovation performance

- Bachelor Thesis -

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Abstract

In a fast changing environment with upcoming technologies and increasing competition, companies have to develop new innovative ideas, products or services to achieve and sustain competitive advantage. Innovation is crucial for the future success of an organisation and has become a strategic imperative. Innovation ideas may come from within the organisation, but increasingly it is argued that new successful ideas come from collaborating with a business partner in a strategic alliance. Despite that the outcomes could be very promising, strategic alliances often fail to succeed and do not successfully achieve innovation. A review of several studies showed that there is no comprehensive understanding on if strategic alliances can have an impact on innovation performance. This thesis will give an overview of why and where in the market strategic alliances are established, specified on alliances for innovation. This paper will discuss which strategic alliances are most 'suitable' to choose when a company enters into an alliance for innovation purposes. Second, there is tried to give an insight into the learning process by looking at how the knowledge gained from the partnership can be optimally implemented by each partner. The benefits and barriers of absorptive capacity will be described and examined, as well as other factors that could have an effect on the innovation performance. Combining this knowledge, this thesis will give an outline of which alliance can best be chosen when and what external and internal components should be developed to let a strategic alliance established for innovation succeed.

1. Introduction

The economic environment changes rapidly and a company has to come up with new ideas to achieve and sustain competitive advantage. When an idea can be converted into a new good or service by a business that creates value that exceeds economic costs and when another party is willing to pay for it, it is called an innovation (Dictionary, 2015). Innovation is crucial for the future success of an organisation. Risk often plays a role in innovation, because on forehand it is not sure if the new idea would work and would fit in the changing environment.

Innovation ideas may come from within the organisation, but increasingly it is argued that new successful ideas come from collaborating with partners. Several studies have illustrated that external relations improve innovative performance (Faems, Van Looy, & Debackere, 2005; Lenssen et al., 2007; Pittaway, Robertson, Munir, Denyer, & Neely, 2004). Other studies show that partnerships not always improve innovative performance, but that it depends on the type of partnership chosen and the ability of a company to learn from the partnership. (Kuratko, Covin, & Hornsby, 2014) Collaborating with partners is a form of a strategic intervention to organizational change, called trans-organisation development. This intervention links the internal processes of the organisation with the business environment. It focuses on creating partnerships with other organisations (Cummings & Worley, 2014). Access to a diverse range of external partners in the company network, enlarges the set of new innovative ideas.

Partnerships are a form of cooperation or commitment between two or more partners, in which they share expertise and resources to achieve mutual benefit and work towards common goals. (Davies & Hentschke, 2006) A partnership is created when both partners believe they can better achieve their goals when they will work together. The involved partners can deliver each other unique resources and expertise, which they would not have had when they tried to operate individually. The benefit is therefore achieved through engagement, knowledge exchange and inter-organizational learning. Organisations will be motivated to work together to gain access to expertise or resources that are scarce and inimitable for them (Dentoni, Bitzer, & Pascucci, 2012). When working together, the sum of specialized resources and skills that firms bring together may lead to more (creative) ideas, and therefore to better, less risky results. These ideas are also cost-effective, as the companies don't have to hire other specialised personnel to get the expertise from.

Partnerships can be established on different levels between and across different sectors. When a company needs access to certain expertise or resources that are scarce for them, they will look for a partner that fits best to their needs. A selection process should start in order to find a partner that has the right skills, technologies or resources that will help them reach the goal they aim to get out of a partnership. This could be a private as well as a public partner. Next to that, the companies will have to discuss to what extent they want to cooperate in the partnership.

This research will focus on strategic alliances, especially for innovation. A strategic alliance is a partnership among business partners in which they choose to work together to obtain mutual benefit. A more inclusive definition will be given in the next section. Many motives to enter into a strategic alliance can be found in literature, the most common will be discussed.

While operating as a partner in a strategic alliance on innovation, a company has to embed and absorb the gained knowledge into the organisation. All parts of the organisation must be able to implement the innovation (Erez, Jarvenpaa, Lewis, Smith, & Tracey, 2013). Innovation is an often used strategy in companies, but successful implementation of corporate innovation turns out to be very hard for most companies due to barriers in this process (Kuratko, Covin, & Hornsby, 2014). Firms cannot fully absorb the gained knowledge, unless the firms invest in their capacity to innovate. The extent to which a firm can absorb the gained knowledge and make optimal use of external expertise, is among other things dependent on their so called absorptive capacity (Narula, 2004). There will be researched in this thesis how well-developed absorptive capacity can stimulate innovation implementation across the organisation and if other factors also play a role in this process. There will be searched for opportunities and barriers during the implementation process. Eventually, an answer will be given to if strategic alliances can improve innovative performance in both companies and on what components this depends.

Therefore, the purpose of this study is to gain insight into strategic alliances for innovation on companies in terms of what alliance best stimulates innovation and afterwards which components need to be present or developed within both companies to successfully come to innovative performance as a result of the partnership.
The theoretical framework that is provided is based on a literature study. Strategic alliances will be described by their motives, forms and position along the value chain and in the business life cycle. Secondly, strategic alliances aimed at innovation will be identified and described. Thereby it is seen why companies enter into a strategic alliance for innovation purposes. There is researched which alliance form can best be chosen for innovation and where this happens along the value chain and in the business life cycle. With this information the step is made towards section three and four, where it is researched what each company needs to develop to successful implement the external knowledge from the other partner to be able to convert it into a competitive advantage. In the last section, those parts will be integrated by showing how and if strategic alliances can improve innovation performance.

While there is a lot of literature available regarding strategic alliances, learning processes and absorptive capacity apart from each other, I will try to integrate them by looking how the learning process is at alliance level and how absorptive capacity, as well as other components that influence the learning process, have an effect on the innovation performance of the involved partners in the alliance.

2. Strategic alliances

Strategic alliances have been frequently researched, reflecting the increasing use and formation of this form of partnership in business practice. A search in the literature shows a long list of motives there are to engage in a strategic alliance, where the term strategic alliance is not limited to some same definition. Also, there is many literature devoted to understanding alliances and what value it creates to the partners involved. This chapter will provide a definition of strategic alliances as it will be used in this paper, motives to engage in an alliance, an analysis of what forms of strategic alliances there are and where in the value chain and Business Life Cycle what form is preferred.

In literature, many definitions of strategic alliances can be found. Regarding all these definitions, one compounded definition will be made in this paper. Agreement seems to be over some key words and their synonyms, used in almost any literature. Building upon literature from (Mowery, Oxley, & Silverman, 1996), (Koza & Lewin, 1998), (Varadarajan & Cunningham, 1995), (Sundelin, 2009), the definition will contain the most used or experienced most important concepts, being: 1) agreement or cooperation, 2) two or more partners, 3) mutual benefit, 4) sharing/access to resources and 5) independent organisations. The definition used in this paper will be as follows:

A strategic alliance is an enduring agreement and cooperation between two or more partners in which they share organization-specific resources, expertise and capabilities to achieve mutual benefit and strive for the joint accomplishment of common or individual objectives, while remaining independent organisations. The synergy created through the agreement will be greater than when each partner would have operated individually. It is a way to gain competitive advantage and to leverage one's internal assets (Mowery et al., 1996), (Koza & Lewin, 1998), (Varadarajan & Cunningham, 1995), (Sundelin, 2009).

2.1 Motives

Companies may have different motives to engage in a strategic alliance. It should be noted that different motives may play a role at the same time, they are not exclusive. First, building upon (Varadarajan & Cunningham, 1995), Tsang (1998), and on Glaister and Buckley (1996) a theoretical framework will be detailed, summarising four identified motives to enter into a strategic alliance. Second, the analytical framework by Das and Teng (2000) will be given to show when a company is willing to engage in a partnership.

Motive 1: Entering new markets
Nowadays, in order to survive, firms need to achieve a sustainable competitive market position and have to diversify in new markets. Each market requires different skills and resources. When a company is operating in a new market, this may be in an unfamiliar environment, where the company is not able to overcome legal, political and regulatory barriers. The company may face constraints imposed by the quantity and quality of their own resources on technological and managerial level (Varadarajan & Cunningham, 1995). Lacking skills, diversifying to another market may not be profitable. In general, when a company is unfamiliar with the environment, the loss in efficiency of technology will be higher. So, the capacity of the firms' resources sets a limit on the scope that they can expand to another market (Tsang, 1998). These resources include material as well as non-material

resources, such as human capacity. This economic risk and capacity constraint can be decreased by entering into a strategic alliance. The alliance partner should have experience and knowledge with the local market and therefore knows where the opportunities and barriers are present. It can provide the needed resources and spread the risk of entering the new market. New products that develop in these new markets will have added value and the gained knowledge can be applied to these new products. Together, they can produce more efficiently and can achieve a sustainable market position. (Glaister & Buckley, 1996)

Motive 2: Market structure
When a company evaluates another company as a (future) competitor, it will search for a strategy to strive ahead of this competitor. A strategy can be that the company chooses to buy or merge with the company, but this may exhaust their resource base. (Varadarajan & Cunningham, 1995) The company can also choose for a partnership, such as licensing or creating a joint venture, to eliminate the threat of competition. By joining forces in such a way, the partners create economies of scale, which may raise entry barriers in their sector of the market. A strategic alliance can also help to overcome barriers for one partner, that alone is not producing enough to benefit from the economies of scale (Glaister & Buckley, 1996). Furthermore, an alliance can be obtained as an offensive strategy, when a company cooperates with a rival company to put pressure on revenues and market share of a common competitor.

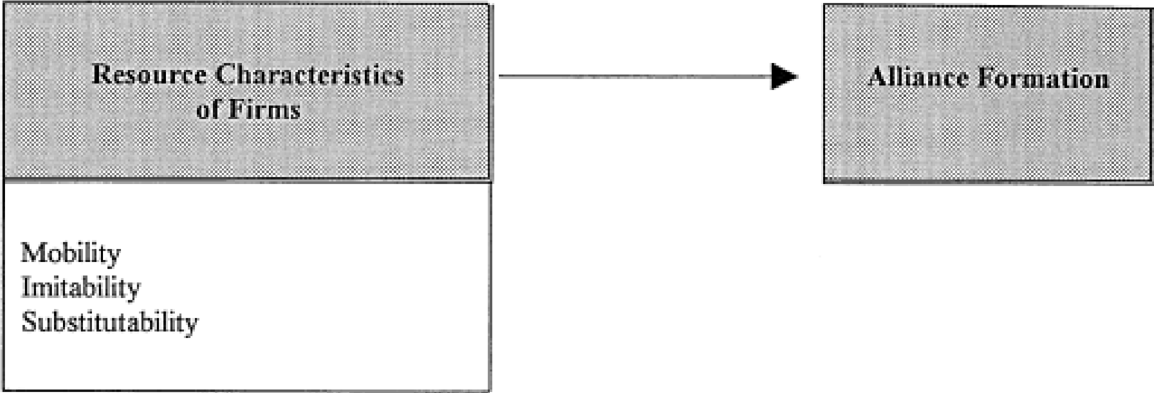
Motive 3: Shared resource usage and risk
Investing in new technologies or products may go along with high potentials of risk. It makes sense to involve more partners, which both invest in the project and share the risk, even though the company could have done the investment for itself (Glaister & Buckley, 1996). When a company lacks financial resources, an alliance partner may provide knowledge or may share in development costs. Looking further than financial resources, in a strategic alliance, each partner can benefit from the resources available by the other partner. These may be unique resources they could not afford or achieve on their own. Also, producing together or sharing their manufacturing facilities, the partners can learn from each other's processes and make them more efficient through learning by doing (Tsang, 1998). In this way, each alliance partner can realize the benefit of economies of scale and experience efforts.

Motive 4: Acquiring new skills/technologies
In strategic alliances, complementary skills and knowledge are brought together through knowledge exchange and inter-organizational learning. Often the term synergy is used, which means that the sum of the skills achieved working together is more valuable than the skills applied separately (Glaister & Buckley, 1996). This may create competitive advantage and allows each alliance partner to focus on their core activities, which also makes the processes more efficient. The learned knowledge and competences may be used as exploitation of existing capabilities of the company and implemented throughout every layer. Also, the partnership could lead to access to new technologies, which again may create a competitive advantage in comparison with their competitors (Varadarajan & Cunningham, 1995).

These motives are around the following priorities that major companies have when entering into a strategic alliance (Booz-Allen & Hamilton (1999): accelerate growth, access critical capabilities, enter new markets, build critical mass, accelerate R&D and reduce costs of capacity.

The framework by Das and Teng (2000) explains how three resource characteristics lead to an alliance formation, being 1) mobility, 2) imitability, 3) substitutability. (Figure 1)
1) Mobility refers to in what extent resources can be moved from one company to another. It is often the case that resources are not perfectly tradable. Some resources, tangible as well as intangible, can simply not be moved to another organisation, such as goodwill and the organisational culture. Also, expertise of one firm cannot be as valuable in the other firm because it does not apply to the same business context. Another company cannot buy these kinds of resources on the market.
2) The second key word, imitability, refers to the ability of a company to imitate practices performed by another company. Tangible resources can more easily be imitated than intangible resources. Socially complex resources such as the reputation and teamwork are hardly inimitable. It may be very costly to imitate certain resources and capabilities for another partner.
3) The last key word, substitutability, refers to the extent in which similar resources can be obtained somewhere else, instead of obtaining it via a partnership with the company having it.

Figure 1. (Das & Teng, 2000)



When resources are perfectly mobile, imitable and substitutable and when a company needs that kind of resources, it is not needed to engage in a partnership. The resources will, provided that the price is right, be available for acquisition in factor markets. Often this is not the case and most unique resources that bring competitive advantage are not tradable. A company's success cannot always be seen or explained from the outside, but may result from the reputation or organisational culture. These resources are not easy to move from one company to another, since each company is internally different. Also they are not easy to imitate or substitute. If this is the case, a strategic alliance would be a solution to obtain these resources. When a resource or capability shows one or more of the resource characteristics given in the figure, and therefore cannot be obtained in the market, it is attractive to engage in a partnership.

2.2 Forms of strategic alliances

Strategic alliances arise in many different forms. In literature, there are different opinions on what type of cooperation belongs to a strategic alliance and what does not. The broadest classification of general strategic alliance relations found in literature will be given. Those forms will be divided in categories and afterwards it will be discussed which forms of partnerships are sometimes not included in the definition of a strategic alliance. Lastly, there will be explained what classification will be used in this thesis.

From the first to the last mentioned form, in the first form the cooperating partners have the most integration and formalization in the governance of their inter-organisational relationship and this decreases in order up until the last form. Building upon Chaharbaghi, Adcroft, Willis, Todeva, and Knoke (2005), the next forms are identified:

1) Joint venture: A joint venture is created when two or more partners create a separate organization with legal existence. It serves a limited purpose for the partners and could be in the field of marketing or production. A joint venture could also arise by acquisition, when one company purchases a whole (or parts of) an organisation.
2) Equity investments: An equity investment happens when a company buys stock purchases of shares in another firm. A minority equity investment is when the ownership in a company due to the equity investment is less than 50% of the total voting shares. A company or person doing such an investment is called a minority shareholder.
3) Cooperatives: A cooperative is a cooperation between two or more partners in which they work together to benefit from their combined resources and skills and share the risks of the outcomes.
4) Joint R&D/product development: Joint R&D is an inter-firm agreement on combining each partner's research and development processes. This form of strategic alliance mostly evolves in companies that deal with a fast-changing technological environment. Research and development is often quite expensive and when combining financial resources and knowledge, solutions can be better and earlier found. This agreement can also lead to or be extended to joint product development.
5) Strategic cooperative agreements: A strategic cooperative agreement is a cooperation between two or more partners in which they collaborate over strategic decisions. They share responsibility of the unpredicted outcome and therefore share risk.
6) Cartels: A cartel is formed between two companies in the same field of work to constrain the competition in the market. Whenever a company sees another company as a threat, it may be a solution to form an agreement together, to get rid of this competition and to together achieve a stronger market position.
7) Franchising: Franchising takes place when a company can use a brand identity to sell on their own, according to the rights and standardized service norms of the company who owns the brand. Also, the marketing will be done according to the owner.
8) Licensing: Licensing takes place when one company grants a certain permit to use or exercise a certain practice, such as a patented technique or process.
9) Subcontractor networks: A subcontractor network is an inter-linked company agreement where a subcontractor negotiates about the prices their supplier has to stick to on the long term. It could also include negotiation about the amount of products or the delivery time. (Chaharbaghi et al., 2005)

Regarding the different forms of strategic alliances mentioned, often in literature a distinction is made whereby the different forms are divided in several categories. Most of the research divides alliances into equity alliances or nonequity alliances. Equity alliances refer then to joint ventures and minority equity alliances, whereas nonequity alliances refer to all agreements that do not involve the share of equity.
Equity alliances involve the share of equity, making the involved partners not only stakeholders, but also shareholders in each other's company. Each company remains fully independent and keeps their own decision power. In the earlier mentioned forms, joint ventures and minority equity alliances are shortly explained and are part of equity alliances.
Nonequity alliances cover a very broad range of contracts or agreements and therefore within this a distinction will be made according to Das and Teng (2000). Das and Teng (2000) divided nonequity alliances into bilateral contract-based alliances and unilateral contract-based alliances:
- Bilateral contract-based alliances evolve when both partners have sustained production of property rights. This means that the partners continuously have to put in resources and knowledge while working together on a common goal. This division covers joint R&D as well as joint product development. The agreement is often open for change and incomplete, so it can change during the process if the cooperation changes (Das & Teng, 2000).
- Unilateral contract based alliances evolve when there is a transfer of property rights. This is the case in the forms of licensing, franchising and subcontractor networks. The agreements in this case are very complete and the involved partners behave accordingly. The level of integration is low and each company delivers different resources individually (Das & Teng, 2000).

The biggest lack of clarity in defining forms of strategic alliances is if a joint venture can be categorised in the type of partnership 'strategic alliances'. There is no agreement on this and no formal rule that seems to apply. Some articles start to explain strategic alliances with examples from joint ventures, where others just exclude them, both without explanation. Searching further, the division could be explained by a certain fact. Some describe strategic alliances as a form of partnership between two companies, where each company maintains autonomy but together they strive for new opportunities. They exclude that partners together create an organisation with legal existence, because this does not really fit the definition of a strategic alliance, in which each company remains independent and the agreement is between the companies (Yoshino & Rangan, 1995). Others that do include joint ventures, think this form of partnership is suitable to place under strategic alliance, because it still is a cooperation between companies in which they strive for mutual benefit (Chaharbaghi et al., 2005).

Another discussion is about if contractual agreements, such as licensing, franchising and subcontractor networks, are covered by strategic alliances. Also in this case, no definite definition can be found. A reason to exclude these types of agreements is to say that these are different growth strategies that do not create a strategic alliance. The partners do not both share expertise, capabilities and resources to achieve joint accomplishments. In such contractual agreements, the flow of resources is one-sided, because one company grants resources in exchange for (most of the times) money. They do not strive for synergy. A reason to include these types of agreements, however, is that this is an agreement between two companies and therefore can be included with strategic alliances.

Above, the broadest range of strategic alliances found in literature was given. Figure 2 illustrates a more narrow range.

Figure 2. Range of interfirm links (Yoshino & Rangan, 1995)

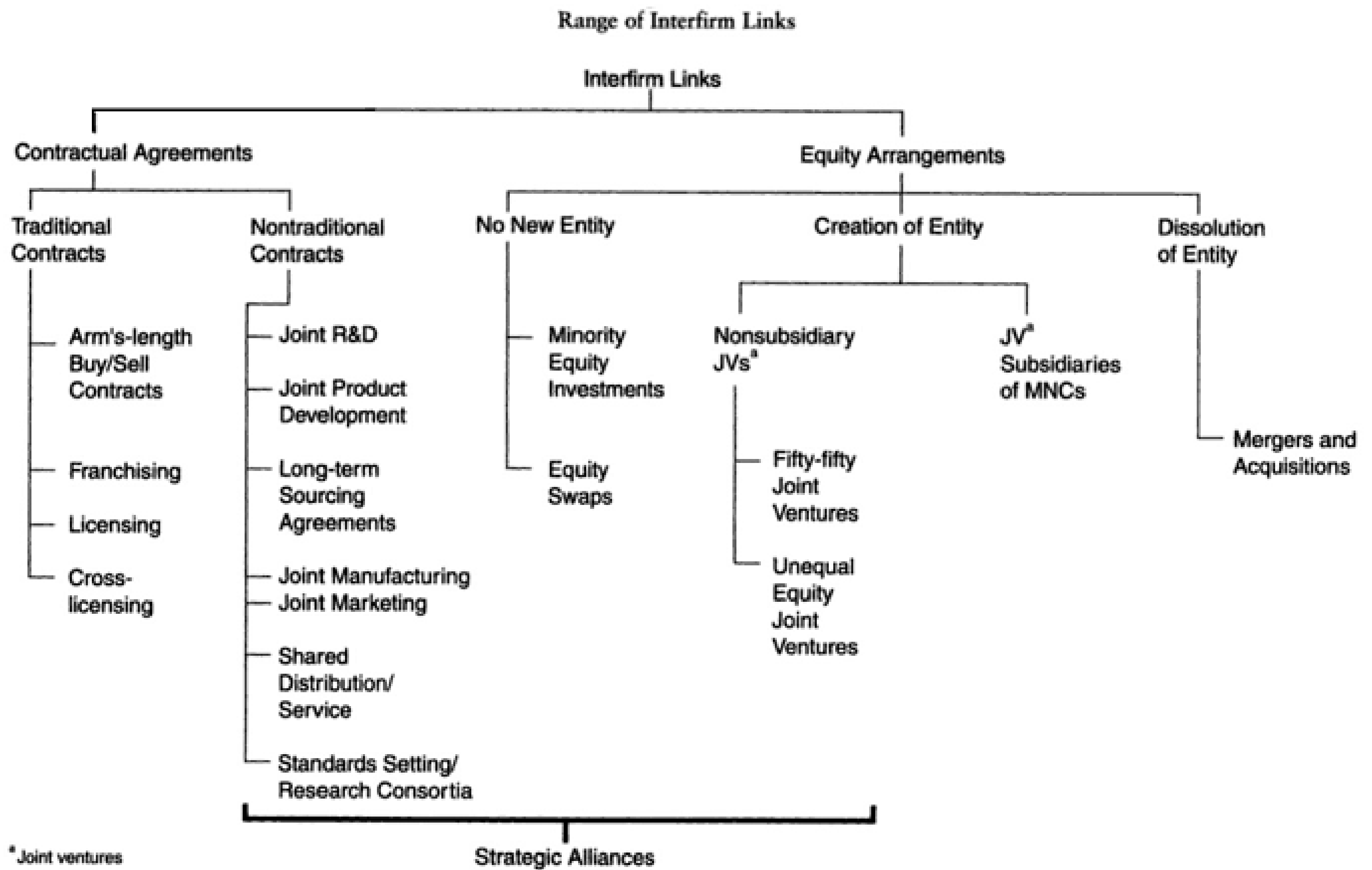


Figure 2 shows that traditional contracts and mergers & acquisitions are excluded. This classification will be used in this thesis, since these two do not fit the definition given concerning strategic alliances above. Within traditional contracts, the partners do not share organization-specific resources, expertise and capabilities. The flow of resources is often one-sided and not to achieve synergy. Joint ventures also do not fit the definition and therefore will be excluded, since the companies have to remain independent and the agreement is just between companies to supplement each company's internal assets. Therefore, the focus in this thesis will be on the strategic alliances within a narrow definition.

2.3 Strategic alliances along the value chain

In strategic alliances, a distinction can be made between vertical and horizontal alliances.
A vertical strategic alliance is a partnership between two or more partners operating in different business fields. This often is established to offer complete solutions or products to customers. A vertical alliance also evolves when a company partners with its suppliers and distributors. Vertical alliances intensify the relationship of the firm with its suppliers. When the suppliers get more involved in the process, the process may get more efficient and therefore the prices can decrease due to the partnership.
A horizontal alliance is a partnership with two or more partners operating in the same business field. This may evolve when one company partners with a competitor to achieve a better market position. They are less vulnerable for other competitors then and can benefit from each other's know-how. It could also be a strategy to sell their products in different markets.

Furthermore, alliances are formed around different areas along the value chain. This is mainly happening around the primarily activities of the company, that include production and marketing & sales. But increasingly, alliances are formed around the support activities of the company, which mainly is regarding technology. (Alliances), 1999)
Three types of alliances can be listed which are most common in business:
1) Marketing and sales alliances;
2) Product and manufacturing alliances;
3 Technology and know-how alliances. (Alliances), 1999)

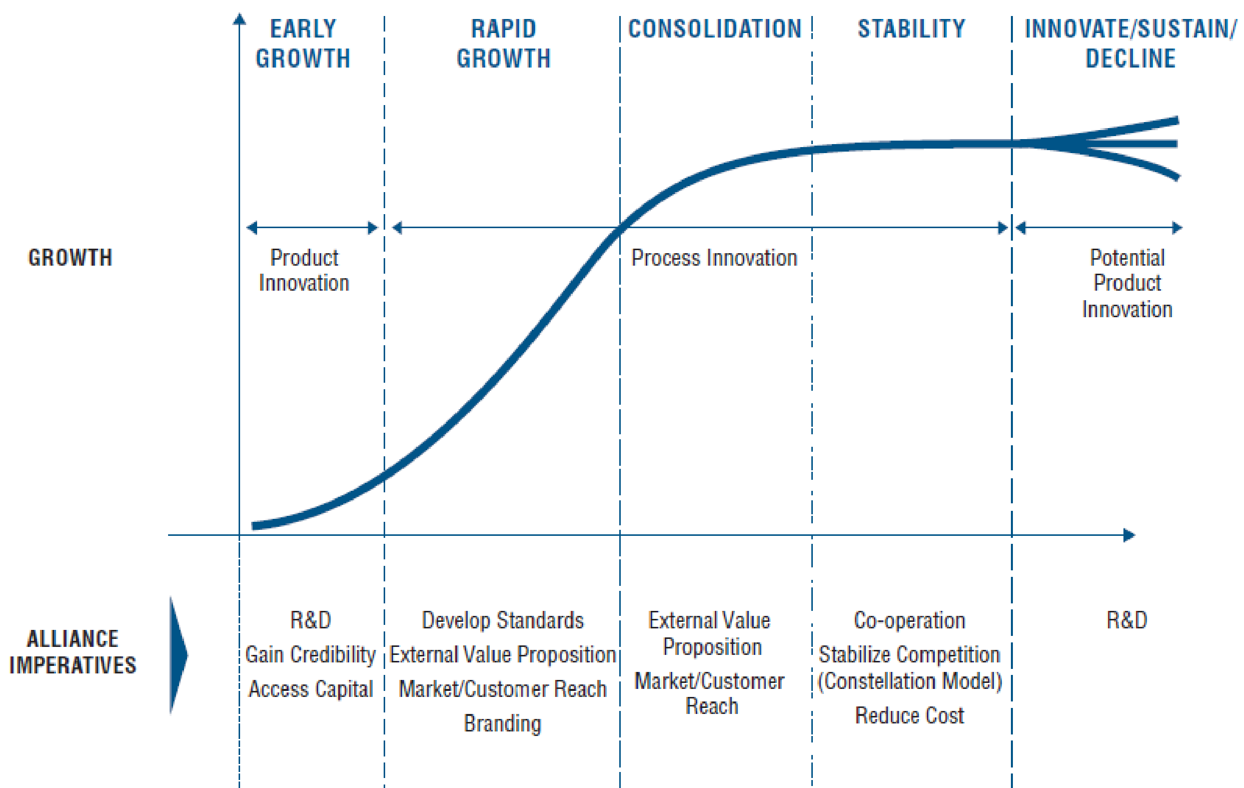
From research on the division of alliances around these three types, (Coopers, 1997) concluded on the following percentages per area along the value chain:
" - Joint marketing 54%
- Joint selling and distribution 42%
- Production 26%
- Design collaboration 23%
- Technology licensing 23%
- Research and development contracts 19%
- Other outsourcing purposes 19% (Coopers, 1997)"

Nowadays, a lot of literature can be found on strategic alliances for technology licensing and speaking almost twenty years later, technology is evolving really fast and new technologies are being discovered day by day. Therefore, the percentages may have changed towards more R&D contracts and more technology licensing.

2.4 Strategic alliances in stages of Business Life Cycle

During growth or during the timespan of a new product, a company goes through different stages of growth. Each stage encounters different threats and opportunities, which requires different (financial) resources. Therefore, strategic alliances could be formed during each stage to overcome the threats and maintain the growth. Depending on what stage the company is in, a different form of strategic alliance will/can be chosen. The different stages of growth are covered by the Business Life Cycle (Harbison, Pekar, Moloney, & Viscio, 2000):

Figure 3. Business Life Cycle Phases influencing alliances imperatives (Harbison et al., 2000)



Each stage and the motivation to enter into a strategic alliance will now shortly be explained:

1) Early growth: During this stage, companies need to come up with new products or ideas to bring to the market. Resources are needed to invest in research and development to come to product innovation. The company needs to gain credibility by customers or other companies, in order to launch their product successfully to the market. A strategic alliance could contribute to fulfil these needs, when the company chooses for joint R&D or joint product development or chooses a partner that grants them access to capital (Harbison et al., 2000).

2) Rapid growth: The first stage is completed and a new innovative product has been launched to the market as a result. The product will be sold on the market and the growth will increase very rapidly. In order to reach this and stay as long as possible in this stage, standards need to be developed to maintain the quality of the product. The focus should be on reaching customers by branding. When a company is quite new in the market, this phase could lead to failure because they cannot deal with the rapid growth regarding the resources

they have. Therefore, strategic alliances with relevant partners can help to develop standards, promote external value proposition and help to reach the right customers (Harbison et al., 2000).

3. Consolidation: The rapid growth phase will eventually start to consolidate slowly to a phase of stability. The focus has to be the same as in phase two, in order to try to still grow and reach the phase of stability whenever growth is not possible anymore without innovating. Therefore, strategic alliances could be formed around external value proposition and market customer reach (Harbison et al., 2000).

4. Stability: The phase now has been reached where the growth has stabilised and the focus is on how to sustain this market position. The drivers from the company change towards reducing costs, production extension and value chain strengthening. This may lead to strategic gaps, where alliances are formed to deal with these gaps (Harbison et al., 2000). Alliances are mostly formed with the motive of co-operation, to stabilize the competition and to reduce the costs.

5. Innovate/sustain/decline: This phase is the most insecure phase in the Business Life Cycle. When the stability phase is reached, three things can happen. The market position can be sustained, where the company has a dominant presence in the market with a stable sales level. Secondly, a period of decline could start. The company is matured and other companies come up with new products or ideas that take the market share away. In order to overcome this phase, the company can choose to again invest in research and development to reach the potential of innovating their product/process so that the growth will recover. It is therefore likely that here a strategic alliance will be formed on research and development (Harbison et al., 2000).

Reflecting on this process, it can be argued that strategic alliances aimed at research and development are most often recurring in the first and last phase of the Business Life Cycle. This can be explained by the fact that when a product is either new or maturing, innovation is needed to keep and sustain growth. Research and development can help to sustain growth and can be increased by investing, but is also an imperative to enter into a strategic alliance.

3. Describing and identifying strategic alliances for innovation

The general expectation of strategic alliances is that cooperation among business partners will stimulate the learning process of the organisation and will stimulate learning benefits. For example by learning cooperation skills, but also more and more about learning innovation skills. Alliances are formed for many motives, summarised in section 1.1. When it comes to innovation, the focus is on the motive 'acquiring new skills/technologies'. This is because it is said that a wider range of information and knowledge from different partners is a stimulus for innovation performance (Chesbrough, 2003). Working with partners, companies get exposed to new skills, technologies, ideas and perspectives. As a result, the company is more likely to improve its process and to develop new products (Chesbrough, 2003). Partnering with different business partners is said to lead to "*more synergies and intake of complementary, multidisciplinary knowledge, which contributes to the production and sales of innovative products".* (Beers & Zand, 2014)

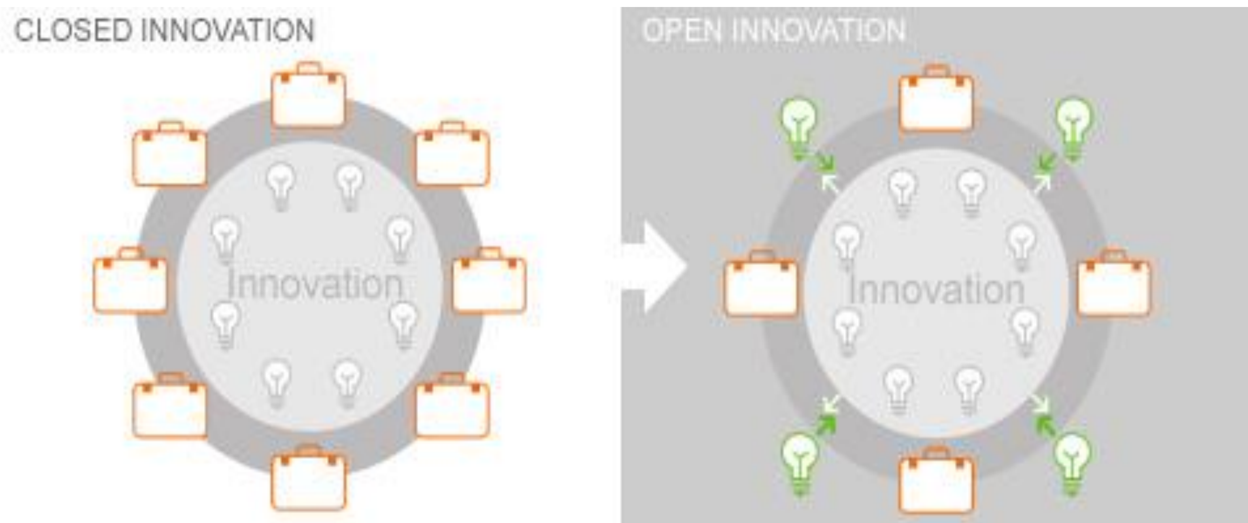
Regarding strategic alliances, different motives to enter apply. The motives to establish an alliance for innovation will be discussed (2.1). Also, within the forms of strategic alliances, partnerships for innovation tend to establish more in one form than in another (2.2) and more in one phase of the value chain than another (2.3). Along the Business Life Cycle (2.4), partnerships for innovation are more established during one stage than during other stages.

Which alliance form is chosen influences the ability to achieve innovation. Also, depending on two organizational contexts, the form of contract determines the degree to which innovation is stimulated and implemented. Learning from part one and the described sections in two, in 2.5 two cases will be described of strategic alliances established for innovation and how the combined knowledge and skills led to new value creation. It will be identified and summarised in a table what form of strategic alliance each case is, where they are established in the value chain, where along the Business Life Cycle and how this overall position may stimulate innovation.

3.1 Identifying motives for alliances for innovation

As mentioned in the introduction, innovation is created when an idea can be converted into a good or a service by a business that creates value that exceeds economic costs. In literature, innovation is often categorised in closed and open innovation. Within strategic alliances, often the focus is on one category. For example, when a company focuses on product innovation, they often adopt open innovation into the innovation management process. Open innovation is defined as *"the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively (Chesbrough, 2003).* The difference with closed innovation is that the company is not only trying to innovate by using internal resources. In open innovation, co-operation is used to gain external knowledge and incorporate external technologies. Figure 5 shows the difference in closed or open innovation, where on the left side ideas come from within the organisation and on the right side, ideas come from sharing knowledge with external partners. Regarding this facts, it is clear that when a company searches a partner for innovation purposes, they focus on open innovation. Therefore, in identifying alliances for innovation, there will be searched for alliances established for open innovation.

Figure 4. Closed- and open innovation (Unknown, 2015)



Grant and Baden-Fuller (2004) stated that open innovation in partnerships is a form of knowledge sharing in which each partner has access to the other partner's knowledge and skills, and the sum of this knowledge is used to exploit complementarities. However, each partner is aiming to maintain their own distinctive base of knowledge. A strategic alliance for innovation is therefore identified when partners cooperate to combine their knowledge, skills and technologies in order to jointly come to new ideas and plans that can be converted into a good or service that creates value, exceeding economic costs. This is not limited to creating new 'tangible' goods, but to creating value for the customer in the broadest sense across the value chain, as long as the customer is willing to pay for it.

Partnerships established for innovation can therefore be recognized from all partnerships when the purpose is to obtain synergy from each partner's skills and technologies. So, while researching partnerships, first the motive for each company to have entered into the strategic alliance has to be identified. This can be, as summarised in section two, to enter new markets, to obtain economies of scale, to rule out a competitor, to share risk or to obtain new skills and technologies. When the first four motives are chosen, the alliance was not primarily formed for innovation purposes. When the last motive is chosen and these new skills and technologies are used to create value, the partnership can be identified as established for innovation purposes.

3.2 Forms of alliances most common for alliances for innovation

Within the range of strategic alliances given in section one, it is found that while looking into alliances established for innovation, some forms are more often found than others. When a company chooses to cooperate with a company to improve their innovative performance, it has to find a partner that has certain skills, technologies or resources that are scarce to them or that they think are valuable to them in order to come to new innovative plans. Secondly, the partners have to decide in what kind of strategic alliance they want to enter. They have to evaluate which form will give them the highest potential to get to innovative results throughout the partnership.

When the alliance is established for innovation, it is often seen that the alliance form comes from the branch 'Non-traditional Contracts' from figure 2. Furthermore, within this category the most common found form is Joint R&D or Joint Product development. (Nieto, 2003) When partners strive to establish a new good or service that creates new value for their consumer, they have to combine their forces. It is non-traditional, because more integration is needed. Working jointly together with a partner, they get exposed to new ideas and perspectives. New ideas are most of the times the outcome of R&D or Joint Product development. This is because, when combining R&D departments, there is multidisciplinary knowledge and the sum of skills and technologies will make it easier to develop an innovative product (Nieto, 2003). According to Sampson (2007), when companies have more R&D alliances in their alliance portfolio, they have a higher knowledge acquisition capacity. Sampson (2007) extended this by stating that particularly alliances such as joint R&D or product development are more likely to exhibit learning outcomes. This will stimulate innovative outcomes and therefore examples of strategic alliances for innovation in literature take the form of Joint R&D or Joint Product Development.

Within equity arrangements (excluding joint ventures), alliances established for innovation are less found. An equity arrangement is established when one company buys stock or shareholdings in another company to obtain for example extra manufacturing possibilities. As an example, the car factory Ford bought a 33.4 percent stake in Mazda. The motive for this equity investment was to "*increase the competitiveness of both companies by improving efficiency and achieving greater economies of scale through effective utilization of resources (...)". (Newswire, 2007)* As can be understood from this example, another motive to enter into a strategic alliance is used, namely 'economies of scale'. In most cases, equity investments are done to have access to more facilities and less for innovation purposes.

3.3 Position along the value chain most common for alliances for innovation

Referring to 1.3 and 2.2, most strategic alliances for innovation take the form of joint R&D or product development. While innovation is mainly imed at creating new things and value, the alliances are mostly technology and know-how alliances. Within these categories, alliances for innovation are most commonly formed around production, design collaboration, technology licensing and research and development. Therefore it could be said that, looking at the value chain, alliances for innovation mainly take place in the 'Technology development' phase.

George, Zahra, Wheatley, and Khan (2001) found out, of a sample of 2456 alliances, that horizontal alliances are often positively related to innovation, because patents are more often established in horizontal alliances as an outcome of making collaborative knowledge creation. Vertical alliances are the contrasting case and are often negatively related to innovation. Alliances established for innovation are therefore more common in horizontal alliances (George et al., 2001).

3.4 Stages in Business Life Cycle most common for alliances for innovation

The first stage of the Business Life Cycle, early growth, is aimed at developing new innovative products to bring to the market. Many products are brought to the market and in order to let your product succeed, it has to be innovative and different. To develop products that match these conditions, investment is needed in research and development. Strategic alliances for innovation are therefore very likely to be established at this stage of the cycle. When the partnership succeeds, it can shorten the cycle because the production innovation stage will be more effective and efficient. Also, at the last stage when the sales stabilized and the growth line is tend to decline, alliances for innovation can be established to come to innovative ideas that will increase the value of the existing product.

3.5 Example identified cases alliances established for innovation

Two strategic alliances established for innovation will be described in this section. There was searched for two strategic alliances on innovation within two companies to show to what characteristics of the former described knowledge they apply. The background of the establishment of the alliance will be discussed, as well as the goals they individually or together want to achieve. It will be described why each case is a strategic alliance and why it is established for innovation. This paragraph is meant to elaborate further on section two by showing cases that match the conditions above. Summarised in a table per case will be, linked to section one and two, what the motives are to enter into the alliance, the form that is chosen and what the position is along the value chain and along the Business Life cycle. The first case is a strategic alliance between Apple and IBM and the second one between Disney and HP.

Apple & IBM

Since 1991 Apple and IBM engaged in many forms of partnerships together, with in some cases also more partners involved in the partnership. Until 2000, twelve unique partnerships are identified between IBM and Apple. Out of twelve, three are related to joint work on communication, three related to RISC technology and some on hard- and software development. Also, four alliances can be identified in which the companies created common standards, sometimes started through creating a joint venture or a joint production contract. Summarised, around nine of the twelve partnerships took the form of joint production or joint research and development. (Hagedoorn, Carayannis, & Alexander, 2001)

Announced in July 2014, Apple and IBM entered into a new partnership called “Mobile first”. In this partnership the two companies wanted to share their unique resources in order to come to new ideas and a new product: business applications. Both firm’s capabilities will be used in the starting phase to come to a well-developed new product and afterwards to successfully launch the product on the market (Hagedoorn et al., 2001). A broad range of knowledge stimulates innovative performance and these companies can enrich the other partner with new knowledge, since they operate in a different market area.

The applications that will be developed run on Apple devices. The applications can be customized regarding the wishes of the customer. Using the app, the customer can make use of the cloud services of IBM which include security, analytics capabilities and management. Apple stated the following about the partnership: “*The new IBM MobileFirst for iOS solutions will be built in an exclusive collaboration that draws on the distinct strengths of each company: IBM’s big data and analytics capabilities, with the power of more than 100,000 IBM industry and domain consultants and software developers behind it, fused with Apple’s legendary consumer experience, hardware and software integration and developer platform.“ (Davis, 2014)*

The partnership can be identified as a strategic alliance. It is, referring to what Apple stated above, an enduring agreement in which they share organization-specific resources, expertise and capabilities. Also, they strive for the joint accomplishment of individual goals: In July 2014, Apple’s iPad sales were not as expected and this partnership would help them reach a new form of customer, namely companies. For IBM, revenues and growth were shrinking and they expected that in this area they could fully extend their capabilities. (Bort, 2014) With this partnership they obtained synergy, because they needed each other in order to develop such

applications and they could not have reached this market area if they operated individually. All these features match the definition of a strategic alliance. It is a strategic alliance established for innovation, because they share knowledge in order to come to a new good that creates value for their customers.

The partnership of Apple and IBM in 2014 can be best classified, regarding the classification of alliances used in this thesis, as joint product development. The companies combined their knowledge to do research and develop a new jointly owned product. Having knowledge and technologies from two companies operating in a different area, there is multidisciplinary knowledge that creates synergy and stimulates the development of innovative products. Therefore, in a strategic alliance on joint product development, innovation is likely to be achieved. The partnership along the value chain is in product and manufacturing and since they are busy with new product innovation, the phase in the Business Life Cycle is the early growth phase.

Strategic Alliance	**Motive**	**Form**
Apple & IBM	To combine knowledge, skills and technologies to develop a new product: business applications.	Joint Product Development
	Position in value chain	**Position Business Life Cycle**
	Product and manufacturing alliance, in the sector of production	Product innovation in the Early Growth phase

Disney & Hewlett Packard
The partnership between Hewlett Packard (HP) and Disney dates back from 75 years ago, when in 1940 HP took care of the acoustics in movie theatres where Disney presented movies. Since then, HP delivered and came up with several technologies that are now used in and around Disney. HP for example designed a headset for non-English speaking customers in Disney World, so that in each attraction the stories told can be translated in each native language. (Alto, 2003) By October 2003, this partnership led to the announcement of a ten-year during strategic alliance aimed at designing entertainment experiences for customers through collaborating with each partners' expertise, knowledge and capabilities. (Robboy, 2003)

In 2003, Disney said that they expected the coming ten years to become a digital decade. They wanted to be ahead of their competitors in new digital technologies by designing new attractions with experiences above each person's imagination. To achieve this, technological innovation was needed and Disney did not have the capability to come to this operating individually. HP is one of world's leading companies in technology and therefore it was no surprise that Disney chose to enter into a strategic alliance with this partner. On the other

hand, Disney World is known as first-class entertainment with creative content, creating an unique customer experience combined with their own high-tech experience and innovation. (Robboy, 2003) Adding to that, Disney's President Bob Iger said that *"Disney and HP are highly successful brands that constantly try to deliver more compelling products and experiences to customers by applying technology, and this common thread is what makes this terrific alliance tick*". (Robboy, 2003)

Summarised, it could be said that Disney and HP are partnering on emerging technologies to create better unforgettable technical experiences for the customers of Disney World. They aim to co-develop new technologies by focussing on content delivery. Within the strategic alliance, they came up with the new idea to develop Mission: SPACE, an attraction ride that simulates a trip to Mars. They jointly developed this new attraction. With the launch of this new attraction, they also took joint marketing initiatives. (Mahnke, Overby, & Nielsen, 2006)

This partnership can be identified as a strategic alliance. It is a ten year during agreement in which they share their organization-specific resources, expertise and capabilities to jointly develop new experiences/attractions. They strive for joint accomplishment of common goals. The companies remain independent, but strive for mutual benefit. The strategic alliance is established for innovation: Disney wants do develop new innovative attractions and HP can fully exploit their capabilities to come to innovative ideas in this alliance.

The partnership between Disney & HP can best be classified, regarding the classification of alliances given in section one, as joint Research & Development in which the companies use their knowledge and expertise on technologies to come up with an idea for a new attraction. The shared resources and R&D departments from two businesses operating in a different business market complement each other. In this way, they have more knowledge, perspectives and ideas to think of ways to create value for the customer. Therefore, this form of strategic alliances stimulates innovation. Along the value chain, the partnership is in technology and know-how alliances. The phase in the Business Life Cycle is probably the last phase, where Disney needs to come up with new attractions in order to keep growing and not lose customers.

<table>
<tr><th>Strategic Alliance</th><th>Motive</th><th>Form</th></tr>
<tr><td rowspan="3">Disney & HP</td><td>To combine skills, technologies and resources to exploit combined capabilities and thereby develop innovative attractions</td><td>Joint Research & Development</td></tr>
<tr><td>Position in value chain</td><td>Position Business Life Cycle</td></tr>
<tr><td>Technology and know-how alliance in the section Research & Development</td><td>Product innovation in the last phase</td></tr>
</table>

4. Organizational drivers of innovation for strategic alliances

As mentioned in section two, strategic alliances for innovation are mostly established to acquire new skills and resources. Strategic alliances are, regarding the definition, established to share organization-specific resources, expertise and capabilities. A company that is searching for new knowledge or skills to improve their innovative performance may enter into a strategic alliance. This happens at the first phase of absorptive capacity, which is knowledge acquisition. In this phase the company searches for valuable inimitable knowledge from an external partner. Strategic alliances for innovation apply to this phase, because it is proposed that the more R&D alliances a company has, the higher the knowledge acquisition capacity is. Alliances with a focus on technological collaboration for innovation purposes, such as joint R&D or joint product development, are more likely to obtain learning effects (Lin, Wu, Chang, Wang, & Lee, 2012). When alliances are established to develop a new technology for innovative purposes, R&D alliances best contribute to reach this goal. R&D alliances help companies to exploit technological information. It provides a learning platform where new knowledge is acquired and new technologies are developed. As a result, when companies have R&D alliances in their 'portfolio of partnerships', the company can achieve a higher innovation output (Lin et al., 2012).

When knowledge acquisition from the other partner in the alliance is successfully achieved and assimilated, the acquired new skills and resources should be implemented throughout the company so each line can process and integrate it. The inter-organisational collaboration and exchanges need to be managed to learn as much from the other partner as possible. Following upon that, the knowledge should be absorbed and transformed so it fits the business context. This is the phase of transformation. Whether this succeeds in strategic alliances can be measured by looking at the number of new product ideas that arise or the number of new research projects that are established as a result of the alliance (Tian, Lynch, & Mardaneh, 2012).

When the external knowledge is transformed and implemented across the company, the company can start to exploit the new acquired skills, resources and technologies. Whether this phase is reached in a strategic alliance, can be measured upon how many new product ideas are converted into product announcements and eventually how many products are actually developed. So, when companies enter into a strategic alliance, a process begins from sharing knowledge to eventually creating a new product due to new acquired external knowledge.

This process depends on the absorptive capacity the company has and will be further elaborated throughout this section.

4.1 Absorptive capacity

Before strategic alliances for innovation can successfully stimulate innovative ideas or products for each partner, external knowledge should be successfully implemented in the organisation so that each company can achieve innovation performance. It is not just dependent on if they establish innovate products or services through the alliance. The companies must be able to acquire, assimilate and exploit the knowledge that they learned from the partner to have the capability of achieving a high level of innovation performance (Lin et al., 2012). Strategic alliances for innovation are meant for knowledge acquisition to achieve innovation, but if a company is able to implement the innovation throughout the organisation will depend on the focal firm's capability to learn from the external partner. It is therefore influenced by the companies' innovation capacity.

Innovation capacity is an outcome of organisational learning. It depends on two types of knowledge generation activities: 1) creating new knowledge internally and 2) assimilating knowledge from outside. The focus in this section will be on the second activity, while this is the kind of learning a company aims for when it enters into a strategic alliance. An interrelated component to assimilating knowledge from outside is the company's absorptive capacity (Forés & Camisón, 2011). The first activity also plays a role and will therefore be discussed in a section five.

In 1989, the most common definition of absorptive capacity was defined by Cohen and Levinthal (1990), being *'the ability of a firm to recognize the value of new, external information, assimilate it and apply it to commercial ends.'* Next to that, Lane, Koka, and Pathak (2006) defined absorptive capacity as the ability of the firm to make use of the externally gained knowledge through three sequential processes, being 1) recognizing and identifying valuable new external knowledge through exploratory learning, 2) assimilating valuable new knowledge through transformative learning and 3) using the assimilated knowledge to create new knowledge and commercial outputs. Those two definitions are quite similar and agree on that absorptive capacity is regarding the ability that a firm can recognize, assimilate, transform and apply knowledge from external partners to their internal processes. Those four factors are often used in a sequence and defined as:

- Recognizing is the ability to identify which external knowledge is valuable and critical to the company's operations. When the right information is recognized, knowledge acquisition takes place. Knowledge acquisition is often used as the first step.
- Assimilation is the firm's capacity to absorb external knowledge. It is also often explained as the process in which a company learns to understand, analyse and interpret the gained external knowledge.
- Transforming is defined as the capability of the company to adapt the gained knowledge to meet the needs of the organisation.
- Applying is defined as the capability of the firm to implement the external knowledge for commercial ends. When the knowledge is implemented, new competencies and opportunities are created. These can be exploited to create innovative products or services and therefore exploitation is often used as the last step. (Das, 2011)

Absorptive capacity is an interrelated component for assimilating knowledge from outside, because companies cannot apply external knowledge without acquiring it. Furthermore, while companies do have the capability to acquire and assimilate external knowledge, they may not be able to transform and apply it to their own organisation (Camisón & Forés, 2010). When this is the case, the acquired knowledge from an alliance for innovation cannot be implemented throughout the organisation and can therefore not be turned into a competitive advantage. The study of Lin et al. (2012) showed that if a company is exposed to a lot of external knowledge, the role of absorptive capacity increases to secure competitive advantage. This is because a company cannot just benefit from external knowledge by being exposed to it, they have to develop internal technological capacity in order to successfully apply it to the organisation. Summarised, absorptive capacity can help the company improve and expand internal learning capacities by integrating internal and external knowledge. Absorption capacity can be developed and improved. It depends on the four steps as described before. Each step has components that influence the capability in a certain way. Building upon Zahra and George (2002), a table is made with each step and explained how the components relate to the steps:

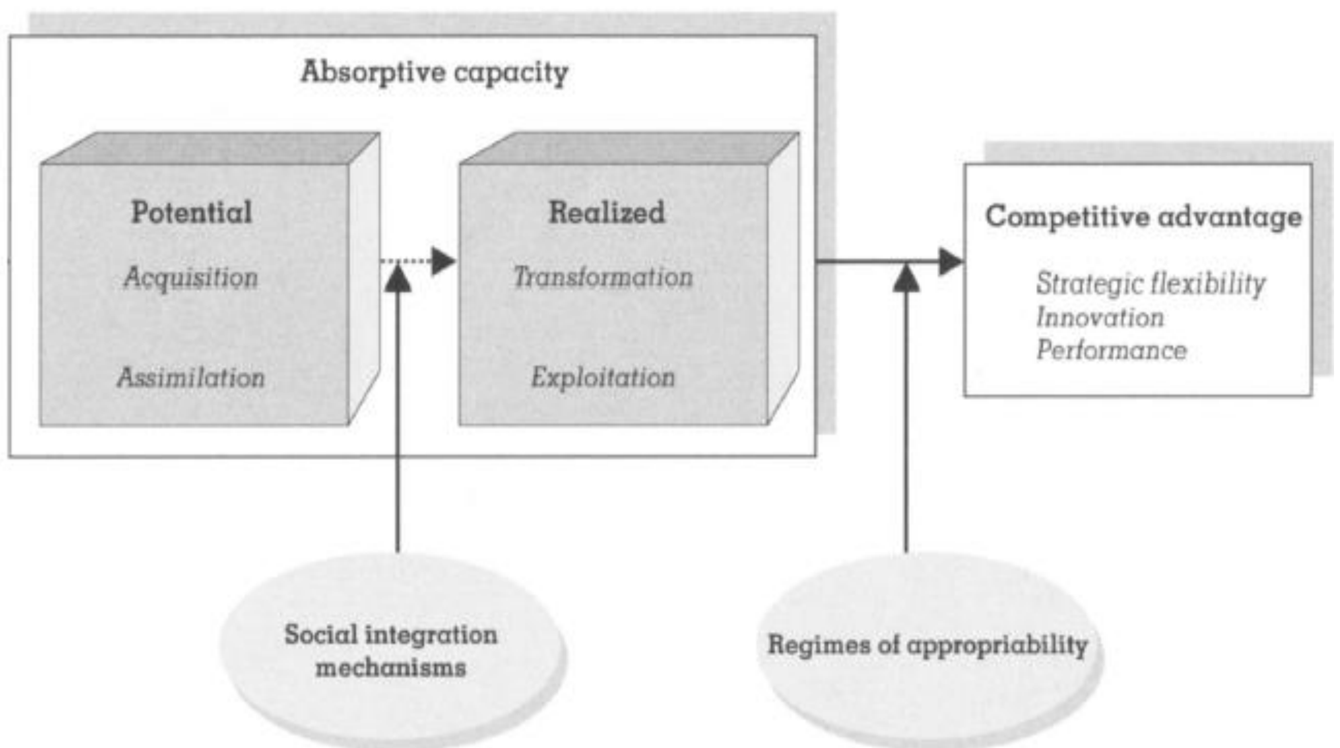
Table 1. Four capabilities/steps of absorptive capacity

Capabilities/steps	Components	Explanation
Acquisition	Prior knowledge Intensity Speed Direction	Efforts expended on knowledge acquisition depend on three related components, being **intensity**, **speed** and **direction**. The greater the effort given to these components, the quicker a company will build the requisite capabilities to recognize valuable knowledge and achieve the right knowledge acquisition (Zahra & George, 2002). Cohen and Levinthal (1990) further suggest that absorptive capacity builds upon the companies' levels of **prior knowledge** and investments. At the most basic level this refers to basic skills and developments in the business area. Prior knowledge is stored in memory and it is studied that when there is more knowledge saved in memory, it is easier to acquire new information and use it in new settings. Psychologists found that prior knowledge even enhances learning, because linkages with pre-existing knowledge can be made and therefore stimulates learning. Valuable knowledge is earlier recognized, because there is experience with external knowledge in memory.
Assimilation	Understanding Comprehension	Assimilation depends on the component understanding, because it is the process in which a company learns to **understand**, analyse and interpret the gained external knowledge. This gained knowledge may differ significantly from the company, because it is often context-specific. **Comprehension** is needed and promotes knowledge assimilation.
Transformation	Internalization Conversion	Transformation is the process in which existing knowledge is combined with the external assimilated knowledge by **converting** it to fit the context of the business. External knowledge is **internalized**, which gives new insights and facilitates possibilities.

Exploitation	Use Implementation	Applying is defined as the capability of the firm to **use** and **implement** the external knowledge for commercial ends. While applied, the learned and already existed competencies can be exploited to create again new goods, services or knowledge.

Within the four capabilities or steps, a division can be made between potential and realized absorptive capacity. Potential absorptive capacity is, regarding the definition of Cohen and Levinthal (1990), the capability of the firm to value and acquire external knowledge. It therefore relates to the first two steps, being acquisition and assimilation. In order to realize the absorptive capacity and successfully implement new external knowledge, the two second steps are needed, being transformation and exploitation. When the realized phase is reached, the external knowledge can be implemented throughout the organisation and can be turned into a competitive advantage. To move from potential to realized absorptive capacity and from realized absorptive capacity to creating competitive advantage, social integration mechanisms and regimes of appropriability play a role (Zahra & George, 2002).

Figure 5. From absorptive capacity to competitive advantage (Zahra & George, 2002)



4.2 From potential to realized absorptive capacity

To achieve knowledge exploitation, the assimilated knowledge has to be shared among the members of the company in order to create understanding and commitment. Effective sharing of information does not always happen properly within an organisation, which makes it hard to implement the gained knowledge throughout each sector of the company. Social integration contributes to knowledge assimilation, in an informal and formal way. Formal social integration relates to the organizational structure of the organisation and how knowledge can flow through this structure. Informal social integration relates to informal structures within an organisation that facilitate the flow of information through the company. It is aimed at removing barriers for sharing knowledge and useful for sharing ideas (Zahra & George, 2002).

Regarding the formal organizational structure, two factors are discussed, being formalization and centralisation. Formalization refers to the extent that rules and procedures determine how behaviours are guided in the organisation. Centralisation means that one person or location conducts management and decision-making activities in the company. The higher the degree of formalization and centralization, the lower the motivation is for employees and therefore the decision speed decreases. While decision speed is an important factor for knowledge acquisition, knowledge assimilation may not take place and the knowledge cannot be transformed and exploited (Jansen, Van Den Bosch, & Volberda, 2005). Lines of authority or bureaucracy may therefore hinder the process of knowledge integration. Companies that use cross-functional interfaces may overcome this problem. Those for example include task forces: established teams with employees from different lines of the business. Cross-functional interfaces contribute to the ability of the employees to overcome differences, interpret issues and build understanding regarding the external knowledge (Jansen et al., 2005). This fits the components of assimilation, which makes it possible to take the next step to transformation. In this way, the organizational structure affects to what extent organizational innovation can be accomplished.

Regarding the informal organizational structure, a company has an (often invisible from outside) informal structure. It refers to social norms that apply, interaction between employees and defined relationships. When there is a feeling of trust and cooperation within this informal structure, it encourages communication and knowledge exchange through different business units. In this way, when there is a feeling of connectedness, it allows the organisation to take the next step to transformation (Jansen et al., 2005).

Informal and formal integration mechanisms therefore influence knowledge transfer between employees and sectors of the company. It shows relational dimensions of a company and determines to what extent employee interaction, problem solving and creative action is happening (Zahra & George, 2002). Companies using social integration mechanisms in a right way are able to make their employees aware of the acquisition and assimilation of knowledge. Integration mechanisms can also be the result of strategic alliances, when this encourages knowledge exchange throughout the company. The mechanisms allow a frequent flow of information through all sectors and therefore employees are able to transform the knowledge so it fits their needs. In this way, the gained knowledge is recognized as valuable and can be exploited.

4.3 From realized absorptive capacity to competitive advantage

When assimilated external knowledge can be transformed so that it fits business operations, it contributes to the company's knowledge base. When a company makes full use of this combined knowledge and is able to derive a benefit from it, the knowledge is exploited and the absorptive capacity reaches the realized phase. The transformation and exploitation capabilities that this phase grants are likely to cause product or process innovation performance. The transformation phase namely helps the company to make changes in their processes to make them more efficient or effective. The exploitation phase continues this by taking a step forward to convert the successfully implemented knowledge in the company to create innovative products or services (Zahra & George, 2002). When successfully finishing each phase, absorptive capacity can lead to competitive advantage with here the focus on innovation, when it is complemented with each company's assets.

In order to successfully achieve competitive advantage as a result of the realized phase, according to Zahra and George (2002), regimes of approbability apply. This refers to the industry dynamics that affect if the firm is able to protect its new products or services. The absorptive capacity capabilities might take time to develop and are costly, but when a firm can successfully protect their external knowledge assets, it often pays off. Companies may also choose to patent their innovative product or service to protect it against competitors.

4.4 Innovation as competitive advantage

Absorptive capacity appears to be the most effective determinant in the company's ability to use external knowledge to increase their innovative performance. In order to achieve organizational innovations, the capabilities related to absorptive capacity mentioned in table one need to be developed (Daghfous, 2004). As seen in 3.3, absorptive capacity can cause competitive advantage. Therefore, well-developed absorptive capacities can affect the effectiveness of innovation activities (Cockburn & Henderson, 1998).

Looking back at the introduction of this paragraph, innovation capacity was said to be an outcome of organisational learning. It included, out of two types of knowledge generation, assimilating knowledge from outside. This all has to do with the four defined capabilities of absorptive capacity. According to the study of Cohen and Levinthal (1990), the greater the amount of absorptive capacities, the more sensitive a company is in adapting new technologies and exploiting them to come to innovate products and services. These companies tend to be proactive, exploiting each opportunity they get from external knowledge and are present and aware in the current environment. They have high organizational adaptability and it is therefore argued that high-developed absorptive capacity can influence innovation performance positively (Cohen & Levinthal, 1990).

5. Critical reflection on steps of absorptive capacity and other components with effect on innovation outcomes

From the moment a company enters into a strategic alliance where knowledge acquisition begins till the moment of turning this external knowledge into a competitive advantage, there are many barriers that may hinder this process along the way. The process of achieving innovative performance through passing each step of absorptive capacity is promising, but hardly ever achieved. (Das & Teng, 2000) The steps seem sequential and to successfully achieve innovative performance, those are guidelines to come there. But, along the way, many exogenous factors and internal constraints play a role in making it hard to accomplish each step sequentially. Also, absorptive capacity, as some literature and figure 6 might seem to implicate, does not automatically lead to innovation when each absorptive capability is well-developed (Lichtenthaler & Lichtenthaler, 2009).

The process of knowledge development as described in section three is often hindered by management problems. Management-related research on strategic alliances often blames the termination of the partnership as the indicator of learning failures for each partner. But, this is a fast drawn conclusion because it can be seen that the termination of an alliance often happens in partnerships that do perform very high but end the partnership for internal reasons earlier in the cooperation. These can be conflicting interests, lack of motivation from one partner, changed priorities or when one company has won the learning race (Hennart, Kim, & Zeng, 1998).

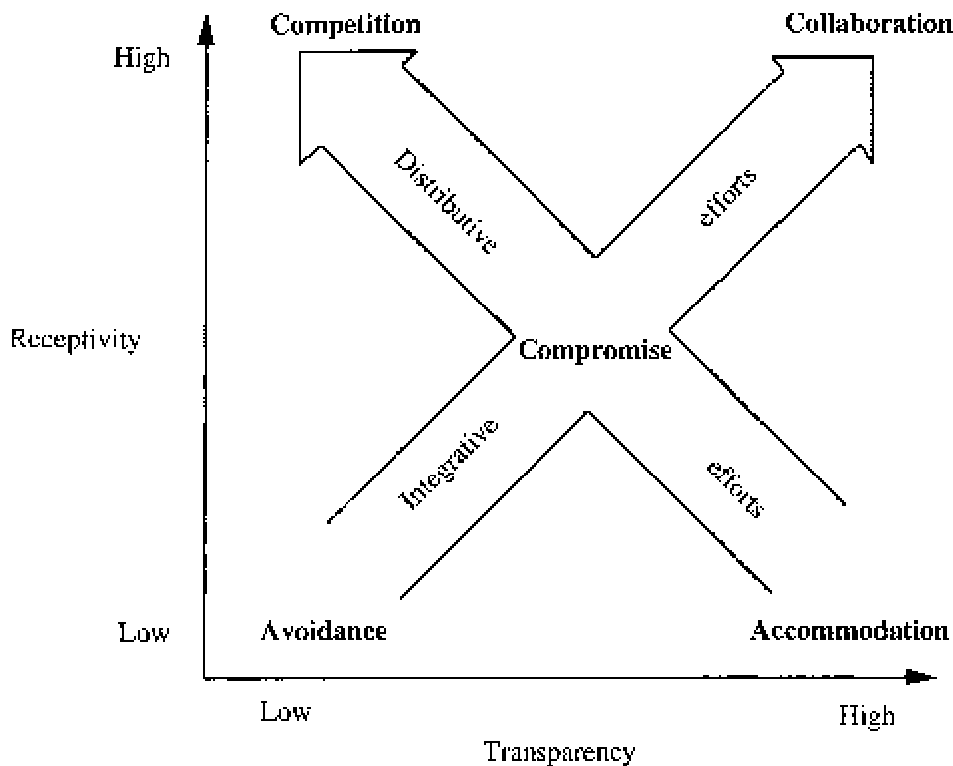
Since the focus in this thesis is mainly on transferring existing knowledge from one partner to another and on creating new knowledge for developing innovative products jointly among the organizations, there will be searched into the collective learning process as a key component for reaching innovative outcomes in strategic alliances. Addressing the steps within absorptive capacity, it will be discussed where internal or external barriers can be present.

5.1 Internal and external barriers in reaching steps of absorptive capacity

Looking at the steps within absorptive capacity, knowledge acquisition and assimilation require transparency and receptivity among the organizations to contribute to accomplish these steps. Transparency is about cooperation, communication, openness and the willingness to disclose knowledge to the other partner. Receptivity refers to the willpower to assimilate the transferred knowledge. It should be noted that having these steps perfectly developed, still the capability to truly absorb knowledge in the company should be present (Larsson, Bengtsson, Henriksson, & Sparks, 1998). But lacking these two factors, knowledge cannot be transferred properly in the first place. Without transparency, no existing knowledge is transferred to the other partner so it cannot be used collectively to jointly come with new ideas. Furthermore, when receptivity is not developed, the motivation to assimilate the knowledge is not there and the generated knowledge will stay at one part of the organization.

Inter-organizational learning can therefore be argued to be an outcome of the motivation and ability of each partner to be transparent and receptive. The extent to which each company is more or less transparent and/or receptive influences the learning strategy within the strategic alliance. In the next figure it is seen which strategy is the case when each partner uses different amounts of transparency and receptiveness.

Figure 6. Learning strategies in strategic alliances (Larsson et al., 1998)



Collaboration and competition strategies both score high on receptivity, so in these learning strategies each partner is willing and motivated to acquire and assimilate external knowledge as much as they can. The two forms differ however in the way that the partners cooperate with each other and therefore the way they score on transparency.

In the collaboration strategy, external knowledge can be successfully transferred and assimilated by each partner, making it able to achieve the first steps of absorptive capacity and thereby making it able to move from the potential to the realized phase. This learning strategy has the best outcomes for both partners, but it is not a rational choice and therefore most of the times this strategy is not accomplished. From an individually rational view, companies strive for the maximum share of the joint learning outcome by taking more knowledge from the partnership than they give to it. Hamel (1991) showed that partners that do behave regarding the collaboration strategy are more likely to be exploited by the other partner. When this is the case, the competition strategy is used. The partner with lower transparency will benefit from the other partner and can leave the alliance after it has assimilated as much knowledge as possible without giving this in return. Therefore, in a strategic alliance, each partner should manage their transparency in a way that they do not lose the learning race. This often results in a case where each partner will show low transparency. This is not the preferred case, since the lack of transparency reduces the opportunities for joint learning. Both partners are not willing to put all their effort and knowledge in the partnership, because there might be the threat that the other partner will benefit from them. This dilemma is also known as the prisoners' dilemma and raises a barrier to come to realised absorptive capacity and afterwards competitive advantage (Larsson et al., 1998). In the other forms, each company has low incentive to acquire and assimilate the external knowledge. In that way, a strategic alliance can never reach innovation purposes.

When knowledge from the other partner is successfully required and assimilated, it needs to be transformed and embedded into their existing knowledge base. Social integration mechanisms strongly contribute to knowledge capability development, because they stimulate the sharing and integration of information through different business levels. While shortly discussed in section three, here this will be elaborated by explaining two barriers that often arise when the step from potential to realized absorptive capacity is made and the knowledge should be transformed. The barriers are 1) people barriers and 2) organizational barriers. (Riege, 2007)

1) People barriers: Whether the external knowledge can be transformed depends on the collective absorptive capacity of each company's individual employee. Employees may not be aware of the value and benefit of the acquired knowledge and thereby may not be motivated to share knowledge because they will not recognize the value or see it as intrusive and extra work. Furthermore, employees can have poor communication skills or the information is hard to share due to differences in experience levels (Riege, 2007). To make employees aware of the value they could be more integrated in the process by providing trainings or setting up information programs. To share the knowledge successful along business units and different experience levels, effective communication skills are needed. This starts by communicating in a shared language with shared symbols (Cohen & Levinthal, 1990).
2) Organizational barriers: To transform the knowledge so that it fits business needs across all business units, the sharing of knowledge is essential. Next to decreasing formalization and centralization, barriers regarding the sharing of knowledge are present. In order to stimulate this, and thereby also contributing to people barriers, formal and informal spaces to collaborate, reflect and generate new knowledge should be offered by the company. Also, resources and infrastructure should be sufficient to support transfer practices. When these factors are lacking, knowledge generated from the potential absorptive capacity phase can never reach the realized phase: the knowledge will only stay in the business unit that generated the knowledge first. To overcome this, adequate resources should be allocated and effective forms of communication should be supported and integrated throughout the company (Riege, 2007).

Regarding innovation processes, there is a high failure rate in moving from potential to realized absorptive capacity (Lichtenthaler & Lichtenthaler, 2009). When a company can deal with these barriers, new knowledge can successfully be embedded into the knowledge base of the company. Organization development strategies can be used to let this succeed. Such a strategy focuses on the importance of a shared purpose within a company, a strong culture and bottom-up change rather than just looking at financial purposes. Capabilities that have the focus in this strategy are coordination and teamwork, commitment and trust, competences, open communication, creativity and learning (Hayes, 2014). In this way, external knowledge can be more successfully linked with existing knowledge, making it able to let it fit the business context and thereby the transform phase is reached. After the information is transformed to fit the internal knowledge, the knowledge base is extended and can be exploited in order to come to product or process innovation.

5.2 Absorption capacity ≠ Innovation capacity

Regarding section three, figure six, innovation seems the automatic outcome of well-developed absorptive capacity. However, in reality this is almost never the case and does not only depend on absorptive capacity. To show that the steps within absorptive capacity leading to competitive advantage are often not as easily completed as the process prescribes the former paragraph described some internal and external barriers. To elaborate on this, showing that innovation is not automatically achieved through well-developed absorptive capacity will be discussed here.

Within a strategic alliance, the partners have to stick to the collaboration strategy in order to achieve as much knowledge acquisition from each other as possible. Afterwards, the presence of external valuable knowledge from the partner does not automatically imply that the company will develop new innovative ideas, products or services. External knowledge will only become valuable when the company can change their organizational structure and culture to facilitate the open innovation process (Vanhaverbeke, Van de Vrande, & Cloodt, 2008).

External knowledge cannot be absorbed when there is a lack of internal knowledge. They have to be combined in order to improve innovative performance. Only when there is a prior level of knowledge, linkage between internal and external knowledge can be made. Internal research capabilities are necessary to be able to exploit external knowledge (Vanhaverbeke et al., 2008). Developing and improving absorptive capacity is at the origin of reaching innovation. So, when the companies within an alliance first expand their internal knowledge base, they will individually be able to increase the capabilities/steps of absorptive capacity. The more knowledge a company has, the easier it is to benefit from external knowledge. Having this in mind, companies should find a partner that grants them new knowledge, but it still has to be a bit familiar with the existing knowledge base, because otherwise the company will not be able to absorb and embed it in the company. This is perfectly summarised by Starkey, Tempest, and McKinlay (2004), stating that *"innovation is more likely if a firm institutes an organizational system to better use internal technologies and not be solely dependent on external technologies."* Therefore, solely relying on absorptive capacity will not lead to converting external knowledge successfully from the alliance partner to innovative products or ideas. IBM overlooked this and made this mistake in the past, they absorbed external knowledge to innovate their personal computer, but failed to utilize technologies that they themselves created (Starkey et al., 2004).

Referring to the start of section 1.1, innovation capacity was said to be an outcome of organisational learning. It depends on assimilating knowledge from outside and creating knowledge internally. Absorptive capacity is related to the first form of knowledge generation. But, to also make the second step towards innovation capacity, internal knowledge should be present and developed to be able to exploit the valuable external knowledge. Only when a company meets these factors and is able to overcome the barriers, innovation capacity is developed. It then is a company with strong open innovation practices, high prior knowledge and high absorptive capabilities. In this case, it turns out to be that the company is better able to explore and exploit technological areas and thereby to come to new innovative ideas.

6. Integrating sections: reaching innovation in strategic alliances

Looking back at section one and two, many motives to enter into a strategic alliance have been identified. The motive to enter into a strategic alliance for innovation is to acquire new skills, knowledge and resources from the partner. Hereby, the company aims to complement their own competencies and their competitive position. Without a strategic alliance, a company often faces difficulties in the development and survival of their business. The increase in competition, the fast changing environment and upcoming technologies causes that a company on itself can often hardly adapt fast enough to this changes. Therefore, companies that believe that another company can help them create competitive advantage through combining skills, knowledge or resources are the companies that enter into a strategic alliance. The companies entering into an alliance expect to learn from each other and expect to be able to convert the new learned skills and knowledge into their company. After doing this, they expect to exploit the new knowledge to develop new products or services. It is said that working with partners let companies get exposed to new skills, technologies, ideas and perspectives and thereby they are more likely to improve their process and to develop new products (Chesbrough, 2003). This all seems very promising, but just being exposed to new skills, technologies, ideas and perspectives seems not to be enough to truly reach innovation performance.

Indeed, partnering with a business partner leads to many incentives that can create innovation. A strategic alliance can grant many advantages such as gaining access to an external knowledge base and learning new skills, limiting exposure risk and increased product market value (Varadarajan & Cunningham, 1995). For these benefits a company often enters into an alliance. But, before this knowledge exchange can start, a company first has to be able to find the right partner to have access to relevant knowledge for their innovative purposes. This refers to knowledge acquisition. R&D alliances contribute to knowledge acquisition, which is higher when a company has entered into R&D alliances. Furthermore, alliances with a focus on technological collaboration for innovation purposes, such as joint R&D or joint product development, are more likely to obtain learning effects (Lin et al., 2012). These alliances therefore can best be chosen for innovation purposes. In the value chain they are around production, design collaboration and R&D. But, in order to learn as much as possible from the other partner, the company should find a partner that can grant them new knowledge not too different from their own knowledge base. The new knowledge has to be a bit familiar with the existing knowledge base of the company, because otherwise the company will not be able to absorb and embed it into the company.

After finding the right partner, the partners have to establish clear rules of what learning strategy they will choose, so that each partner will show the same effort and is able to get the most knowledge out of it. While the knowledge is acquired and assimilated, this has to be transformed within the company so that they can eventually exploit the new capabilities they learned. As written in section three and four, this is a quite complex process that turns out to be very hard to accomplish. A strategic alliance can have many benefits to the company and alliances and innovation are also said to be complementary for achieving strategic and financial goals (Bucic & Gudergan, 2002). Despite that the outcomes could be very promising, strategic alliances often fail to succeed and not successfully achieve innovation. The failure rate of strategic alliances in 2000 was researched by (Das & Teng, 2000) with the result that 60% of all alliances are terminated within the first two years of the cooperation.

Companies that enter into an alliance have high expectations and seek resources and skills that enable them to develop innovation, but most of them are not equipped to implement an innovation-based strategy afterwards. Often a company does not know how to manage the innovation process and therefore the biggest problem is lack of knowledge on how to transform the knowledge so that it can be implemented in the company. Large companies often focus on economic indicators and financial measures, because that directly shows how the company is performing. They forget to focus on interpersonal relationships, cultural and structural issues and the learning process for each individual (Bucic & Gudergan, 2002).

7. Discussion

The primary contribution of this thesis is to give an overview of why and where in the market strategic alliances are established, specified on alliances for innovation. This thesis has discussed which strategic alliances are most ‘suitable’ to choose when a company enters into an alliance for innovation purposes. Secondly, there is tried to give an insight into the learning process by looking at how the knowledge gained from the partnership can be optimally implemented by each partner. The benefits and barriers of absorptive capacity have been described and researched, as well as other factors that could have an effect on the innovation performance. This study’s results substantiate to the extant literature but expands our knowledge by combining the above knowledge, so that it is clear what type of partnership can best be chosen when and what external/internal components should be developed to let a strategic alliance established for innovation succeed.

In existing literature, the inclusion of strategic alliances as an element of innovation performance in a company is recognized. Also, a lot of literature can be found about knowledge transfer and inter-organizational learning, but there is limited research that has been done on the learning process at the level of a strategic alliance. So, a review of several studies showed that there is no comprehensive understanding of the impact that strategic alliances have on innovation performance. Some studies try to fill this gap by explaining it through a company’s absorptive capacity. In this study this component is also taken into account by explaining what effect it could have on the innovation performance. Few literature elaborates on absorptive capacity and neglect the multidimensionality of the concept. Most literature is aimed at explaining the benefits of absorptive capacity, while there are also barriers to it. According to other literature on inter-organizational learning in partnerships, this component seems not to be the only one explaining innovative performance. Therefore, more research should be done on organizational antecedents. Cohen (1990) already mentioned it, but this has not been effectively researched yet. Further studies could show that absorptive capacity is indeed not just one determinant of successful knowledge transfer. Furthermore, more empirical research should be done to illustrate in practice how companies cope with management challenges in implementing innovation. Best practices from several forms of partnership as well as their learning strategy should be discovered. Analysing this, it can be seen what absorptive capacity entails and how this should be dealt with to come to innovative performance. Also, case studies could show what other components, internal or external, may influence knowledge transfer that could lead to innovative performance.

Limitations of this study are that most literature of the basics what a strategic alliance entails dates back from quite a long time ago. Although cited a lot, the literature used in section one could differ from the current situation. While recent literature also still refers back to that literature, it is hard to test if the information given is still valid. Furthermore, my discussion focused on internal capacities that should be developed to improve innovative performance. It is not taken into account if absorptive capacity should be internally developed or could also be outsourced through for example hiring other staff. This study builds upon existing literature and does not include empirical research due to a short time span to test the former literature or elaborate on that. Only based on the literature found during the research time, conclusions can be drawn. Recommendations are done based on these conclusions, but how these recommendations are put into practice should be further researched.

8. Conclusion and recommendations

Companies enter into a strategic alliance for innovation to get access to new knowledge, skills and expertise from the partner to accelerate internal and external innovation. Within forms of alliances, when the aim is to reach innovation performance, Joint R&D or Joint product development can best be chosen. Those forms are both aimed at creating new knowledge or products. Companies have a higher knowledge acquisition capacity when they have R&D alliances in their network. Furthermore, R&D and product development alliances are more likely to exhibit learning outcomes which can stimulate innovation, because with new knowledge, new ideas can more easily be developed and converted into a product or service. These are mostly technology or know-how alliances. Along the value chain, businesses often enter into a strategic alliance regarding production, design collaboration, technology licensing or research and development when they strive for innovation outcomes. This happens mostly at the beginning or end of the business life cycle, because at those stages new products/more efficient production should be developed to sustain competitive advantage.

If a company is also able to implement the external knowledge for innovation depends on the focal firm's capability to learn from the external partner. It is influenced by the companies' innovation capacity. This depends on internal and external knowledge generation activities. External relates to absorptive capacity, which is divided into four steps or capabilities. Each capability was explained and should be developed to successfully help to turn the knowledge into a competitive advantage. In developing these capabilities, it is found that it is not as easy as sometimes described to go through these phases. There are external and internal barriers that hinder the process. These include differences in motivation from the partners, different learning strategies, people barriers and organisational barriers. Furthermore, there has to be a certain amount of knowledge in the company's knowledge base to be able to benefit from external knowledge. Only when there is a prior level of knowledge, linkage between internal and external knowledge can be made. Internal capabilities are necessary to be able to exploit external knowledge. Having this in mind, also the chosen partner has an influence on how much knowledge can be absorbed, because the gained knowledge should not be too different from the existing knowledge base. External and internal knowledge generation cannot just be separated and needs to be complemented to really be able to achieve innovation performance. So, solely relying on absorptive capacity cannot lead to innovation.

When the companies both succeed to satisfy these conditions, a strategic alliance has many benefits and can be complementary for achieving strategic and financial goals. But still, many strategic alliances do not succeed and therefore do not successfully achieve innovation. To overcome this, companies should develop an innovation-based strategy while entering into a strategic alliance. A clear contract should be made between the companies so that neither firm will lose the learning race. In the innovation strategy, companies should take external as well as internal factors into account. At the moment companies are more likely to look at components that are more visible for the short-term success, such as economic and financial measures. Therefore, more time should be spent to manage external knowledge transfer throughout each business unit of the company by focussing on the informal and formal integration mechanisms. Furthermore, at the starting phase a company should find a partner and alliance form that can really contribute to their knowledge base, by not being too different but also not to similar so that the company can still apply the knowledge.

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