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Factors indicating first-mover advantages and second-mover advantages

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Abstract

Many studies has been made in order to understand the concept of first-mover advantages and second-mover advantages but the researchers are divided in their opinions of which factors are influencing and to what extent these factors influence the companies. Therefore, a framework was developed which unifies and explains the factors indicating first-mover advantages and second-mover advantages and also the importance of these factors in three different industries.

Keywords: First-mover advantage, second-mover advantage, framework

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1 Introduction

This chapter gives an insight in what this dissertation is all about. It starts with a brief background about first-mover advantages and then moves on with an explanation of the research problem. Then this chapter deals with the purpose, definitions and limitations of this dissertation. At the end of this chapter an outline for the rest of the dissertation is presented.

1.1 Background

“Good generals make their luck by shaping the odds in their favour”

MacMillan 1983

Everybody has heard of companies, which by being the first-mover have gained an extremely high market share and have had a sustained competitive advantage for decades. Examples of those companies are Coca-Cola and Gillette. A company who has the opportunity to be a first-mover will therefore rush into a new market/product segment with no second thoughts. Not many know that a company named Star introduced the safety razor more than twenty-five years before Gillette...

As stated above the first-mover advantages have been overemphasised in the industrial life but the theoretical research about first-mover advantages and disadvantages has been different. Many researchers have been looking at many aspects of the issue from many points of views. However, the main research has been performed in The United States on the American market and therefore lacks an international perspective on the issue. The literature also lacks a model overreaching how the different types of first-mover advantages and second-mover advantages affect the industries. Because of this, a model has been developed, showing the different influences of first-mover advantages and second-mover advantages in three industries with both international and Swedish companies in the Swedish market.

1.2 Research problem

The problem, which we want to examine through our research, is the following:

- To what extent do first-mover advantages and second-mover advantages exist relatively in different lines of businesses?

1.3 Purpose

- To create and test a framework of the theories of first-mover advantage and second-mover advantage.
- Does the amount of first-mover advantage and second-mover advantage differ from industry to industry?

1.4 Definitions

We define a *first-mover* as the company who is the first to enter a market with a commercial perspective. *Early followers* are the companies which enter an existing market early. *Late followers* are the companies which enter a mature market. *Differentiated followers* are the companies which create a niche in an already existing market. *Me-too followers* are the companies which enter an existing market with existing products.

Second-movers are the followers who enter a market later than the first-mover; i.e. the early follower, the late follower, the differentiated follower and the me-too follower. *First-mover advantage* is defined as the advantage, which gives the first-mover a competitive advantage by being the first-mover. *Second-mover advantage* is defined as competitive advantage which the first-mover cannot gain from.

1.5 Limitations

The research is limited to three different lines of businesses, one in the high-technology industry, one in the low-technology industry and one in the service industry. Only a few companies were interviewed in our research since this is enough to reach the purpose of this dissertation. The research was conducted only in the Swedish market but with both national and international companies.

1.6 Outline

The outline of the dissertation is the following:

Chapter two: Here we explain our choice of method and theory.

Chapter three: This chapter deals with the theoretical framework and describes the different first-mover advantages and the second-mover advantages. The chapter continues with a short presentation about the different industries. At the end our hypotheses and model is presented.

Chapter four: The empirical method is presented in this chapter.

Chapter five: In this chapter we analyse our empirical research by evaluating our hypotheses and comparing them with the outcome.

Chapter six: The final chapter contains a conclusion and a discussion.

2 Scientific method

In this chapter we will explain the methodology used for conducting the research, including choice of theory and scientific approach.

2.1 Choice of methodology

In order to understand the concept of first-mover advantage and second-mover advantage, the work started with reading a lot of literature. Mainly articles, found via search bases on the Internet, were studied and because of the substantial amount of articles we wrote a short report for each article. Later, in the process of writing this dissertation, we were very thankful for this method.

Many well-grounded theories were found for both first-mover advantage and second-mover advantage but we did not find any model which unified the main theories and additionally many researches were only based on one industry. Many theories had a general approach which made us question if it could really be true that an influence was equally important in all sorts of industries and a model started to be developed. Three very different industries were chosen and some background research was made to understand the industries. Based on the theories read and background information gathered about the industries, hypotheses were eventually developed about the impact of each influence. These hypotheses were used to create a model and were later empirically evaluated.

2.2 Choice of theory

In order to explain first-mover advantages and second-mover advantages many different researches about the issue were thoroughly examined. Many of the theories are based on classical theories of business administration and economic research. Scale effects, network externalities and buyer-switching costs are examples of such theories. The most important sources of the dissertation are the researches of Lieberman & Montgomery (1988), Kerin, Varadarajan and Peterson (1992) and Golder and Tellis (2002). The

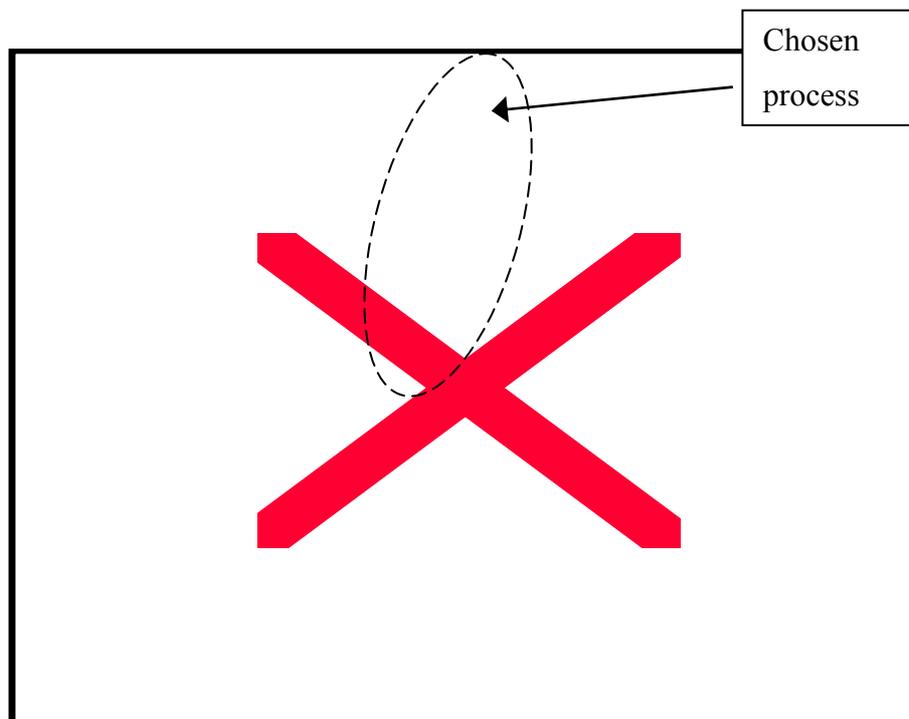
researches of Lieberman and Montgomery were the first attempt to unify and categorise the different mechanisms influencing the first-mover advantage. Kerin, Varadarajan and Peterson research wrote a conceptual framework on first-mover advantage. These two sources together with Golder and Tellis research about second-mover advantages have been used as a base in the dissertation. Other sources have been used as a supplement.

2.3 Scientific approach

Through the process of developing knowledge about the subject an objective and analytical approach has been used. Many theories have already been developed about the subject and therefore a deductive approach was chosen. A number of hypotheses were developed and tested empirically through a survey. To compare the influences of the theories at three different industries a cross sectional approach was used. This gave an understanding how the advantages for being first/second affect the industries today.

Figure 2.1 The Research process onion

Source: Saunders, Lewis, Thornhill (2003)



2.4 Summary

To be able to understand the concept of first-mover advantage and second-mover advantage we started with reading a lot of literature about the subject. The choice of theory was chosen after reviewing the literature. After the review of the literature the theories of this dissertation were written down. A review of information about the different industries has also been done to result in hypotheses and a model. Since there already were a lot of existing theories a deductive approach has been used in this dissertation.

3 Theoretical framework

This chapter consists of the relevant theory for our research. It starts with the theory, collected from books and articles published by different authors. The chapter continues with information about the different industries. By using the theories and the industry information, our hypotheses and model were developed and are presented in the last part of this chapter.

3.1 First-mover and first-mover advantages

In the existing literature there are many opinions about the definition of a first-mover how and when first-mover advantages arise. The most used definition of a first-mover in the literature is based on in what order the companies enter the market; i.e. the first company/product to enter a market is the first-mover (Lieberman & Montgomery 1988, 51, VanderWerf & Mahon 1997, Durand & Coeurderoy 2001). This also constitutes that the concept of first-mover is identical with a pioneer (Lieberman & Montgomery 1988, Golder & Tellis year). Golder and Tellis define in their book “Will and Vision” (2001) a first-mover/pioneer to be a firm that is first to commercialise a product. According to Patterson (1993) a first-mover is “an organisation, which is first to employ a particular strategy within the context of specified scope”.

A widespread definition of the advantages made by the first-mover is that first-movers tend to have a higher performance than their followers (VanderWerf & Mahon, 1997) and that they receive long-term competitive advantages (Kerin, Varadarajan & Peterson 1992). Lieberman and Montgomery (1988, 41) specified first-mover advantages in economical terms; “the ability to earn positive economic profits (i.e. profits in excess of the cost of capital)”.

3.1.1 *Technological leadership*

Advantages through technological leadership derive from successful patents or R&D. When a technological advantage is the output of R&D the first-movers may gain advantages if technology can be patented or maintained as

trade secrets (Lieberman & Montgomery, 1988, 43). The reason to use patents is to protect the firm who carried out the costly research and development for a new product. First-movers can use patents to gain and protect technological leadership (Golder & Tellis, 2002, 7). For example, the pharmaceutical industry where the biggest firms gains advantages through R&D and protects these advantages with patents. Kannianen (1992, 5) pointed out that successful R&D projects enhance the productivity of the first-mover's material resources. Technological leadership may play an important role in high technology industries but may be of little importance in low technology sectors. This is mainly due to the short life-cycle of many products from the low technology sector. It may take eighteen months to get a patent on a product that has a twelve month life-cycle.

3.1.2 Pre-emption of scarce assets

If a first-mover firm acquires some sort of scarce assets then that firm might gain an advantage due to that acquirement (Lieberman & Montgomery 1988, 44). Assets can be positioning in space as for example geographic space and shelf space. It can also be assets like natural resource deposits or manufacturing locations. These sorts of assets can be obtained early by the first-mover if superior information is possessed before the evolution of the market and can therefore buy the assets at market prices that are below the prices after the evolution. Main (1955) made an empirical study about how a high concentration of a scarce resource (nickel) in one area made it possible for a first-mover to acquire all of the resources and by doing that to dominate the world production for decades.

Spatial pre-emption

In some markets there are room for only a limited number of profitable companies (Lieberman & Montgomery 1988, 44-45). The first-mover can choose the most attractive niches and take actions to limit the space, available for other entrants. As an example one can state the cruise ferries between Stockholm, Sweden, and Helsinki, Finland, where there is only room for a few companies.

Pre-emptive investment in plant and equipment

A first-mover can also prevent other entrants by making pre-emptive investment in plant or in equipment. This results in an enlarged capacity, which can be used to cut prices and make new entrants unprofitable (Lieberman & Montgomery 1988, 45).

3.1.3 Scale effects

Scale effects or economies of scale arise when a firm can reduce the unit cost while producing a large number of a product. If it takes time to install capacity, and there are economies of scale in production, then the first firm in the industry has more time to expand and achieve these scale economies (Mueller, 1997, 838). According to Lopez and Roberts (2002, 1004) early entrants are likely to attain enough volume that will trigger scale effects. Those effects will eventually render a cost advantage. An example of a firm that has scale effects is the Swedish furniture company IKEA. IKEA's idea of business is partly built on the concept of scale effects. Their business purpose is to sell a lot of products to a low price but with a high customer value.

3.1.4 Network externalities

If a first-mover creates a large network with positive network externalities for a product, the demand will not be so high for other entrants' products (Mueller 1997, 831-832). The first-mover's product may establish an industry standard through network externalities. Customers gain greater benefits or enjoy lower costs when using the standard product (Lieberman & Montgomery, 1998, 1113). Examples of products, which are characterised by network externalities, are telephone systems and credit cards. The value increases with the number of users who are connected to the system. That is why firms like Vodafone and Comviq give away cellular phones almost for free as one signs for a subscription. The more cellular phones, the more are available for calls, which create a value for the operators.

3.1.5 Buyer switching cost

The buyer switching cost is the cost for the customer to switch from one brand to another. Buyer switching cost may result in an advantage for the first-mover firm since a late mover has to invest more to attract customers. Switching costs may arise from transaction costs or investments that the buyer makes while adapting the seller's product. Another type of switching costs may arise from supplier specific learning by the customer. For example, if the customer adapts to characteristics of a product and its supplier, he may find it costly to switch to another brand. Another example can be drawn from the computer market. Once one has become accustomed to one company's software, one must incur the costs of learning another to switch to another manufacturer's product (Mueller, 1997, 831).

The customers may create buyer switching costs, themselves, as they build up experience with the first-mover's product (Lieberman & Montgomery, 1998, 1113). Michael (2003, 66) states that the first-mover may be able to create buyer switching costs due to adoption of human or physical capital. This kind of buyer switching cost seems small in some businesses like hotels, restaurants and retail stores. Nakata and Sivakumar (1997, 474) argue that the first-movers buyer switching cost advantage may not be as great as presumed, particularly in more commodity-type, non-durable categories. Buyers may find the price gap between the pioneers product and local alternatives to be so great that they will move from the former to the latter. This of course will not be the case for less price-sensitive buyers, who are willing to pay more for high and consistent quality or for image reasons. For example, a wealthy person may prefer to buy a Mercedes car instead of a Skoda due to image reasons.

Buyer switching cost in industrial-goods markets often dissipates over time as buyers become more knowledgeable about competing products. On the other hand, in consumer-goods markets, buyer-perceived risk may lead to greater reliance on known brands or suppliers. Therefore, the first-movers advantage through buyer switching costs may be more powerful in consumer-goods markets than in industrial-goods markets (Zantout &

Chaganti, 1996, 51). The seller can also create switching costs by contracts with its customers, which is common in business-to-business relationships.

3.1.6 Brand loyalty

Brand loyalty is a preference for a brand that develops from a consumer's prior purchase of the brand (Golder & Tellis, 2001, 6). The first-mover has a great advantage to shape the tastes of the consumers. The first-mover's product will then be the basis for comparison with late mover's products. As long as the first-mover's product is satisfactory for the consumers it will outperform the late mover's product. This kind of brand loyalty may be particularly strong for low cost convenience goods where the benefits of finding a superior brand are seldom great enough to justify the additional search costs that must be incurred (Lieberman & Montgomery, 1988, 46). If a customer is satisfied with a certain company's product he will buy another product of the same brand when it is time to renew or repurchase this product.

Buyer inertia due to habit formation

The behavioural psychologists as a result of operant conditioning explain habits. If consuming a product receives more utility than its cost then the purchase will be repeated and will eventually become a habit when the consumer will buy the product without thinking. First-movers have the opportunity to condition consumer buying habits before second-movers arrive. However, if the consumers gain more from switching to another brand the weaker the habit will be to buy the first-mover brand. The potential gain from switching brands should be proportional to the size of the expenditure made on the product. Due to the fact that the strength of a habit depends on the frequency of purchase small expenditure products should have the greatest first-mover advantage from buyer inertia. Examples of small expenditure products are soft drinks, sweets and fast food. These products are also called convenience goods or experience goods due to consumers learn about the quality of the brand from experience. It is also these sorts of products that have a high correlation between advertising and profitability (Mueller 1997, 835-837).

3.1.7 Experience effects

Experience effects or economies of experience, derive from the reduction in costs or improvements in quality that a firm gains from experience in production and marketing of a product. Such effects may also arise as companies over time learn to produce more efficiently, using less raw material and with less waste. Most of these experience effects derive from learning by doing by the staff, but also as managers learn how to manage new operations more efficiently (Hill, 2002, 384). These effects may give the first-mover an advantage over later entrants. According to Golder and Tellis (2001, 8) first-movers can either sell the product at a lower price to customers or keep a higher margin to themselves due to these effects.

Learning curve

The costs fall by every output that is produced. If the learning can be kept secret from others it can be a substantial entry of barrier. However, research has shown that diffusion occurs quite rapidly between industries and that diminishes first-mover advantages which come from the learning curve (Ghemawat & Spence 1985; Lieberman 1987).

3.2 Second-mover and second-mover advantages

The second-mover can also be the 3rd, 4th or a 5th company which moves into an already existing market. Late movers are those who enter a market after it has been explored (Golder & Tellis 2001). Late movers can, according to Lieberman & Montgomery (1988,51), be classified as to their numerical order in their entry, elapsed time since entry of the pioneer or by general categories like early follower, late follower, differentiated follower, me-too follower etc. However, the categories cannot be compared across markets which means that to be able to determine which category a company belongs to depends very much of the market itself.

As stated above there are a lot of advantages for the first-mover firm, but one has to be aware that there might also be some disadvantages for the first-mover or second/late-mover advantages.

According to Lieberman and Montgomery (1988,47) late movers may benefit from (1) the opportunity to free-ride from the investments made by the first-movers, (2) resolution of technological and market uncertainty, (3) technological discontinuities that open for a new entry and (4) for various types of incumbent inertia that make it difficult for the incumbent to adapt to environmental change.

3.2.1 Cost disadvantages

The existence of “isolating mechanisms” is important if a firm shall be able to sustain a first-mover advantage. Examples of such mechanisms are patent protection, buyer-switching costs, brand loyalty, scale effects etc. (Makadok, 1998, 685-686). These are the mechanisms that make a first-mover more profitable than others. If these mechanisms did not exist, then the firms would just compete away the profit, which was made by being the first-mover. If the firms recognised the pioneering advantage of demand it would lead to a race for being the first firm to enter a new market. That would lead to a cost disadvantage which makes the advantages of being the first disappear and no long-term profit difference will exist due to the timing of market entry.

3.2.2 Free-rider effects

Second/late-movers may gain free-rider effects from the first-mover firms' investment, since according to Mansfield et al (1981) imitation costs are about 65% of the cost of innovation. A follower firm may be able to free-ride on the first-mover in a lot of different areas like; R&D and buyer education. But following firms can also free-ride through hiring staff that has been educated by the first-mover. The ability of follower firms to free-ride reduces the magnitude and durability of the pioneer's profits, and hence its incentive to make early investments (Lieberman & Montgomery, 1988, 47). A good example of a firm that use free-rider effect is Matsushita. Matsushita free-ride on other firms inventions, for example Sony, instead of inventing or develop products on their own.

3.2.3 Technological or market uncertainty

Late-movers may gain advantages through resolutions of technological or market uncertainty. When a company adopts a new technology they get a competitive advantage. By reducing unit cost or introducing a better product the first adopter is expected to enlarge its market share. If the first-mover does not find the best market position or if there is market uncertainty, it will have a disadvantage in relation to the late-mover firm. Late-movers will be able to better position their brands because of what they have learned about consumer preferences from the first-mover's incorrect positioning (Kerin et al, 1992, 35). For example, when Toyota first was planning to enter the U.S. automobile market they interviewed the owners of cars from Volkswagen, which was the leading brand in small cars. The information they got about what owners liked and disliked about Volkswagen was incorporated in the design process for the new Toyota (Lieberman & Montgomery, 1988, 47). Another example can be drawn from the Swedish mobile phone market. Ericsson was the first-mover in this market but they could not find the most attractive market position. Instead it was Nokia, who put most of their efforts on design while Ericsson put most of their efforts on innovation, which became market leaders.

3.2.4 Interest of managers

Mueller (1997, 841) states that a firm in the mature phases of its life cycle is often governed by the interests of its managers, which do not always include the persistent improvement of efficiency and technical development. Managers of large, mature firms may prefer to substitute the relatively simple strategy of growth through merger instead of developing new products or improving existing ones. If tendencies like these take over the first-mover after it has established a dominant position in a market, that dominant position can become vulnerable. One line of business that is characterised with interest of managers is the automotive industry. As examples one can state when Ford merged with Volvo and General Motors with SAAB.

3.2.5 Government interference

If government of a particular country or different countries fear that a first-mover can become a world monopolist they can create a competitor through subsidies. This is what happened in Europe when Airbus was subsidised to be able to compete with the near world monopolist Boeing in the commercial aircraft market (Hill, 2002, 262-266). The airline industry is another example of a line of business that has had a lot of government interference world-wide.

3.2.6 Resource homogeneity

Another view towards the concept of first-mover advantage is the view about resource position barriers. A resource can be both tangible (machinery, capital) and intangible (brand name, knowledge of technology, trade contacts). According to Wernerfelt (1984, 119-120) “an entry barrier without a resource position barrier leaves the firm vulnerable to diversifying entrants, whereas position barriers without an entry barrier leaves the firm unable to exploit the barrier”.

According to Barney (1991, 104) there cannot be any first-mover advantage in an industry with homogeneous resources. If a firm in this type of industry is able to conceive of and implement a certain strategy, then all other firms will also be able to conceive of and implement that strategy. These strategies will be conceived of and implemented in parallel, as identical firms become aware of the same opportunities and exploit those opportunities in the same way.

3.3 Industry information

The research has been made in three different industries in Sweden, consisting of both Swedish companies and foreign ones. One of the industries is from the high technology sector, the mobile phone industry. Another is acting in the scope of services, the bank industry. The last industry, the ice cream industry, comes from the low technology sector.

3.3.1 Mobile phones

The mobile phones manufacturers act within a high technology industry that is rather new. It is only about ten years since the mobile phone was introduced to private persons. But since those days the mobile phone industry has grown to a multimillion business. In 1993 there was sold 204 000 mobile phones in Sweden, in 2002 this number had grown to 2,3 million pieces per year. Today, about nine out of ten Swedes own a mobile phone, either private or through their employment.

Nowadays the mobile phone can be used in a lot of different areas besides calling, such as sending short messages (SMS), using Internet services (WAP) and take digital photos. The mobile phone market has gone through some major changes and has developed rapidly the recent years. There have also been some drawbacks for the mobile phone manufactures during recent years. To cut down on costs and to increase revenues a lot of manufacturers have started to out-source some of the steps in the manufacturing process. Today this line of business often is looked at as a line of business that is evolving and with a great uncertainty about the future. The product design is a perishable and new models and new types of services are being introduced all the time.

3.3.2 Bank

Since the financial crisis in Sweden in the early 1990's the Swedish banking market has expanded rapidly and in December 2003 there was 127 banks established in Sweden. The biggest companies have increased and broadened their services, and many new companies have entered the market. One major change in this line of business is that banks and insurance companies have moved into each other's areas. The biggest banks in Sweden are now involved in the life insurance business and some of the insurance companies have started up their own banks. But the Swedish banking business is still dominated by four major banks.

In 1986 foreign banks were allowed to open subsidiaries in Sweden, and in 1990 they were allowed to open branches. Since then 22 foreign banks has been established on the Swedish market. Most of the foreign banks have put their efforts on the corporate banking market and on the securities market.

Since 1996 the banks has started to provide their services online over the Internet. The number of services has increased through the years and more and more computers have been installed in Swedish homes, which have lead to an increase in online customers. More than 41 percent use the Internet as the main connection with their bank, as well private persons as companies. Today Sweden is the leading country, percentage of the population, when it come to digital banking. The use of online banking gives the customers a better overview of their banking business. It also provides them with the opportunity to make their everyday bank transactions without having to visit their local bank office. This increasing use of online banking allows the banks to replace their traditional bank offices with ones that can concentrate more on advisory services and sales.

The bank industry is a large and dynamic industry and therefore we have chosen to only concentrate on the private banking, hereafter named as the bank industry/business.

3.3.3 Ice-cream

The hot summer of 1955 was the big breakthrough for the ice-cream consumption in Sweden. Even though the manufacturing was increased by about 50 percent, it was not enough to satisfy the demand. More than two million popsicles were imported from Denmark. The ice-cream consumption has steadily increased since then. Today the average Swede eats about 14 litres of ice cream per year.

The Swedish ice-cream industry is a low technology industry that consists of one big manufacturer, with about 50 percentages of the total market share, and a lot of smaller ones. The ice cream industry is an industry that is

characterised as an industry with different seasons; one high activity season, during the summer time, and one season, during the winter, with lower activity. There are some foreign companies acting on the Swedish market, but mostly do Swedish companies through licenses produce foreign manufacturers' products.

3.4 Hypotheses

From the theory and industry information, stated above, hypotheses have been developed, which will be tested empirically. Each hypothesis is created to show the situation in each industry relatively to each other. The hypotheses are stated below together with explanations.

3.4.1 Hypothesis 1: Pre-emption of scarce assets

H1a: There will not be any limits of assets regarding raw material in any of the three industries.

There are no limits regarding assets of raw material because skilled labour is widely found and none of the three industries uses any scarce raw materials. Possibly there might be some limits regarding electronic components in the mobile phone industry.

H1b: There exists a higher grade of spatial pre-emption in the bank industry and in the ice cream industry than in the mobile phone industry.

The bank industry and the ice cream industry are characterised by having very similar products within the industry. This makes it difficult for a new entrant to establish a profitable organisation. The mobile phone industry is very depending on innovations, which make it impossible for a new entrant to invest in the most attractive niches because new innovations and new niches are created continuously. This results in a lower grade of spatial pre-emption.

H1c: *Pre-emptive investment in plant and equipment is not used as a competitive strength in any of the three industries.*

The mobile phone companies do not use surplus capacity as an instrument to compete due to their fast-changing industry. This fact makes it unnecessary to invest in something that will change in a short period of time. Since the bank industry is a service industry it will be hard for them to make pre-emptive investment in plant and equipment. Neither will the ice cream industry have done any pre-emptive investments. But there might be some surplus capacity due to the fact that this industry has different amounts of activity in different seasons.

3.4.2 Hypothesis 2: Scale effects

The influence of scale effects is higher in the mobile phone industry and in the ice cream industry than in the bank industry.

The scale effect is higher in the mobile phone industry, because of the high innovation costs in both production and product technology. The reason for a higher grade of scale effects in the ice cream industry is that this is an industry with an intensive production. There should also be some scale effects in the bank industry since bigger banks can lend money to a lower rate than smaller banks. However, the extent is not as high as in the other two industries.

3.4.3 Hypothesis 3: Technological leadership

The level of technological leadership is more important in the mobile phone business than in the ice cream and bank businesses.

The importance of patent and research & development is substantial in the mobile phone industry. The ice cream industry, which is a low technology industry, does not gain to the same extent from patent and research & development. The bank industry uses the same amount of technology inside

the industry and patents and research & development is not crucial in this industry.

3.4.4 Hypothesis 4: Network externalities

The influence of network externalities is more important in the bank industry than in the ice cream industry and in the mobile phone industry.

The service existing in the bank line of business is one example of what could be an important network externalities. The service may be very expensive for the customers if only a few of them is using the service but cheaper if more customers are using the service. In the other two industries we do not believe that the effect of having more customers will improve the customers' use of the products and thereby favour the companies.

3.4.5 Hypothesis 5: Brand loyalty

Brand loyalty has more effect on the ice cream industry than on the bank industry and on the mobile phone industry.

Ice cream is low cost convenience goods where no benefits will be found by searching for a superior brand. By making a thorough search among the banks' products and among different mobile phones, better terms/products may be found by the customer.

3.4.6 Hypothesis 6: Buyer switching cost

H6a: The effect of uncertainty about the quality of competing products is higher in the mobile phone business and in the bank business than in the ice cream business.

The customer of mobile phones is uncertain about the quality of untried competing products and because of this uncertainty, the customer stays with the same company's product. There will be a similar tendency in the bank industry but not in the ice cream business. Ice cream is a low convenience good with lower uncertainty about quality.

H6b: *The effect of buyer switching cost has more influence on the mobile phone line of business than on the ice cream line of business and on the bank line of business.*

If a consumer switches to another mobile phone he/she has to adapt to another software which takes time and therefore the consumer chooses to stay with the same brand. The ice cream industry is not affected by switching to a competing product because the product is of low technology and no costs will be raised for the customers by trying a different ice cream. There might be some switching costs involved while switching bank but they will not be as big as they will be in the switch of mobile phones.

3.4.7 Hypothesis 7: Uncertainty (market or technology)

Uncertainty about competing products affects the mobile phone industry more than the ice cream industry and the bank industry.

The customer in the mobile phone industry does not know if the product he buys is the best for him/her due to many different software and a continuously stream of innovations. Customers are well informed about competing products in the ice cream industry, and in the bank business the customer just have to open the daily newspaper to see information about different bank's rates and so on.

3.4.8 Hypothesis 8: Cost disadvantages

The mobile phone industry is more affected by cost disadvantages than the ice cream industry and the bank industry.

Due to the high rate of new innovations, the mobile phone industry includes high cost disadvantages. It does not exist any races for innovations in the bank industry and therefore will the impact of cost disadvantages be non-existing. The situation in the ice cream industry will be similar.

3.4.9 Hypothesis 9: Free-rider effects

The free-rider effects will mostly affect the mobile phone industry, and then the ice cream business and least affect the bank industry.

In a high-technological line of business, such the mobile phone business, with a substantial amount of research and development it can be very profitable to be a free-rider. There are free-rider effects in the ice-cream industry to a rather high extent. When the first-mover has a success with a new product or flavour the following firms soon will have a similar product on the market. Free-rider effects are probably non-existing in the bank industry because of lack of new innovations. However the similarity between the different banks is very high but this does not allege that there exist any free-rider effects.

3.4.10 Hypothesis 10: Interest of managers

Companies in the bank business and in the ice cream industry are more likely than companies in the mobile phone industry to grow through mergers than through innovations.

Since companies in the bank business are often large they will mostly grow through mergers. It is also a fact that banks have done so through history. The ice cream industry is not known as an industry with high innovations, therefor it will be more likely that companies grows through mergers in this industry. The mobile phone line of business is an innovation incentive industry, so the companies will mostly grow through innovations.

3.4.11 Hypothesis 11: Government interference

The industry which is most affected by the government is the bank industry; the ice cream industry and the mobile phone industry are very little affected.

The bank business is very dependent on the government and an example of this is the abolishing of the Swedish monopoly of banking in 1986 when foreign banks were allowed to open subsidiaries in Sweden. There is low

risk for interference in the ice cream business and mobile phone business because there are many competitors and no risk for monopoly.

3.4.12 Hypothesis 12: Resource homogeneity

All three industries have homogenous tangible and intangible resources.

All of these three industries should tend to have homogenous tangible resources as well as intangible. The availability to gain tangible resources such as machinery will be similar for each company in every line of business. The case will be the same for intangible resources.

3.4.13 Hypothesis 13: Experience effects

H13a: Experience effects mostly gain the bank industry and less the mobile phone industry and the ice cream industry.

Experience and learning effects gains mostly the bank industry because managers tend to stay on their positions for a long period of time. Therefore the managers learn how to manage new operations more efficiently. The high frequency of innovation in the mobile phone industry reduces the experience effect. Since the ice cream industry is a low technology industry the impact of experience effects will not be so high.

H13b: Diffusion of experiences is more common in the bank industry than in the mobile phone industry and least common in the ice cream industry.

It will be most common with diffusion of experience in the bank industry since employees in this line of business will be most likely to stay in the same business even if they change employer. This phenomena will be most likely for employees with higher positions in the organisations and it is these employees who possess the experience effects. In the mobile phone industry there will be also be diffusion of experience as employees change employer, but not to the same extent as in the bank business. Diffusion of experience will be least common in the ice cream line of business. If an

employee will change to another workplace the probability that he/she stays in the same line of business is not so big, since this is a low technology industry where employees do not need any certain education. Another fact is that all lot of companies, in this line of business, are small companies which tend to have a higher loyalty among their workers.

3.5 Model of first- and second-mover advantages

Based on the theory and the industry a model was developed which indicates the impact of first- and second-mover advantages. The impact of the different factors has been compared relatively in the three industries.

Table 3.1 The model indicating first/second-mover advantages

First-mover advantages:	Mobile phone	Bank	Ice-cream
Pre-emption of raw material	No limits	No limits	No limits
Spatial pre-emption	Lower	Higher	Higher
Pre-emptive investments	Low	Low	Low
Scale effects	Higher	Higher	Lower
Technology leadership (Patents)	Higher	Lower	Lower
Technology leadership (R&D)	Higher	Lower	Lower
Network externalities	Lower	Higher	Lower
Brand loyalty	Lower	Lower	Higher
Buyer switching cost	Higher	Higher	Lower
Buyer switching cost	Higher	Lower	Lower
Experience effects	Lower	Higher	Lower
Experience effects (diffusion)	Medium	Higher	Lower
Second-mover advantages:	Mobile phone	Bank	Ice-cream
Uncertainty (market or technology)	Higher	Higher	Lower
Cost disadvantages	Higher	Lower	Lower
Free-rider effects	Higher	Lower	Medium
Interest of managers	Higher	Lower	Lower
Government interference	Lower	Higher	Lower
Resource homogeneity (tangible)	Higher	Higher	Higher
Resource homogeneity (intangible)	Higher	Higher	Higher

3.6 Summary

The concept of first-mover and first-mover advantages as well as the concept of second-mover and second-mover advantages has been presented in this chapter. Since our aim was to study if there are different issues influencing different industries, the theories presented are those which can be used in such a research. A short presentation of general information about the different industries has also been presented. By using the theories and the industry information our hypotheses and model were developed.

4 Empirical method

The empirical method will be presented in this chapter. It will start with the chosen strategy of the research and continue with collection of data. Then there is an explanation of our operationalisation. The chapter ends with a discussion about the reliability and validity of the research.

4.1 The research strategy

The purpose of this dissertation was to create a model that shows if there are any certain indications about first-mover advantages or second-mover advantages in different industries or if it differs from industry to industry.

There are different strategies to choose between, for example: experiment, survey, case study, grounded theory, ethnography and action research. As one has to choose a certain research strategy it is important to choose the one that is appropriate to the particular research questions and objectives. Hypotheses were developed, from the theoretical framework and from the information about the different industries, to be tested in a survey. This strategy is a good way of exploring existing theories, which will enable us to evaluate our hypotheses. There will not be any statistical significance in this study, instead the aim will be to find indicators of different first- and second-mover advantages in different industries.

Hypotheses can be defined as testable propositions about two or more events or concepts (Saunders et al., 2003, 479), and be used when it is assumed that there already is enough theoretical knowledge within a certain area.

4.2 Collection of primary data

Many theories explain first-mover advantage as a general phenomenon and our aim was to show that there are different issues which are influencing different industries. Therefore one industry was chosen in the high-technology sector, one in the low-technology sector and one in the service sector. The choice of industries to be examined became the mobile phone

industry (high technology), the ice cream industry (low technology) and the bank industry (services). We picked the different companies at haphazard without considering size, age or order of entry. The reason of using a random sample of companies, is because the research are about finding how they experience first- and second-mover advantages in their line of business.

4.2.1 The questionnaire

To test out hypotheses empirically a questionnaire was developed with the hypotheses as a starting point but it had to be operationalised to become comprehensible for the respondents. A questionnaire is an easy and cheap way of gathering information but there might be risks, for example might the participants answer without thinking. By using a questionnaire it was possible to include all techniques of data collection in which each person is asked to respond to the same questions in the same order. Since the respondent companies were Swedish or foreign with Swedish branches it was decided that the questionnaire should be conducted in the Swedish language. This conclusion was made to make it easier for the respondent and to reduce misunderstandings. The questionnaire included fifteen questions. In each question the respondent was allowed to tick one in a scale out of three. The reason for using such a narrow scale was because this is enough while one conducts a research about finding indicators. If a broader scale it would just have created confusion. A test of the questionnaire was made at a company, independent from the research, which helped us to make some final changes.

4.2.2 Telephone interviews

It was decided to conduct the questionnaire through telephone interviews. This was the best way for our research since our questionnaire included quite a lot of questions and since telephone interviews are an easy way to get access to the right persons in the companies. When calling the companies we were connected until we had reached the person within the company who could answer our questions. Telephone interviews is also a fast way to get answers, it reduces the risk to misunderstand the questions

and it makes it harder for companies to reject a telephone interview than an ordinary questionnaire send by mail. Compared to face-to-face interviews the telephone interview also was in advantage for us since they made it possible to interview persons even if there was a long distance.

4.2.3 Response Rate

A smaller number of respondents were chosen: five respondents in each industry. The response rate was 100 % (5/5) in both the ice cream industry and the bank industry but only 40 % (2/5) in the mobile phone industry. The low response rate in the mobile phone industry did not really affect our research. The research would not be statistical significant anyway due to the fact that it was decided to have a low number of respondents (5) in each industry.

4.3 Collection of secondary data

The collection of secondary data included an extensive literature and article search to get knowledge about the subject. The information has been collected from books, which have been borrowed from different University libraries in Sweden, articles, which have been ordered from Swedish libraries as well as from foreign ones, references from articles and books, searching in databases and on the Internet. Several searching words and authors have been used in databases, for example first-mover, first-mover advantages, second-mover, second-mover advantages, Lieberman, Montgomery, Tellis and Golder.

4.4 Operationalisation

To make our theory empirically fitting, questions to get relevant answers were formulated. The process of formulating theoretical concepts to understandable questions was made before the interviews, but still with the same meaning as they have in theory and in our hypothesis. The main focus of the research was to find indications if there are any certain first-mover advantages or second-mover advantages in different industries or if it differs from industry to industry. Because of this we have, through hypotheses,

developed a model showing the different influences of first-mover advantages and second-mover advantages on three chosen industries with both international and Swedish companies in the Swedish market. Each question has been connected with a hypothesis.

The purpose of the first question was just to state in which one of the three industries the interviewee were acting in. Question number two to question number eight was formulated to find information about first-mover advantages in the industries. The last questions, number nine to number fifteen, are all concerning second-mover advantages. The interviewees were allowed to tick one of the grades: low, medium or high, with some exceptions stated below.

Question number two a), b) and question number three was formulated to provide us with relevant information about different pre-emption in the three industries. These questions are connected to hypothesis number one. In question number two a) the interviewee was allowed to tick either: very limited, medium or not limited. In question number two b), they were allowed to tick either: a small space, medium or a lot of space.

The purpose of question number four was to find out the existence of scale effects within the different industries, and it was connected with the second hypothesis.

Question number five a) and b) was connected with hypothesis number three. The purpose of these two questions was to find out if there is any technological leadership, through patents or Research & Development, in the different industries.

The next question, number six, was formulated to find if any company had developed any network externalities in their line of business. This question was created in connection with hypothesis number four.

Question number seven was created, in connection with hypothesis number five, in order to find if there existed any brand loyalty in the different industries.

To find if our hypothesis, number six, and the theory about buyer switching cost was relevant, question number eight a) and b) was formulated.

Question number nine was the first question about second-mover advantages and it was created to find if there exists any uncertainty among the customers in each of the industries. The question was formulated to relate to hypothesis number seven.

Question number ten is concerning cost disadvantages and it is connected with hypothesis number eight.

To evaluate our hypothesis, number nine, about free rider effects, we developed question eleven. In this question the respondent was asked about to what extent there is risk that a company imitate other companies' products instead of develop their own.

To find to what extent there exist second-mover advantages about interest of managers in the industries, question number twelve was formulated. To find if there was any existence of this subject, the interviewees were asked to say if companies mainly grow through innovations relatively through mergers. Their choice of answers was the following: low (mergers), medium or high (innovations). Hypothesis number ten is connected with this question.

Another subject related to second-mover advantages is the existence of government interference. Therefore question number thirteen was created in connection with hypothesis number eleven.

Question number fourteen a) and b) is connected to hypothesis number twelve and is concerning resource homogeneity. Fourteen a) is concerning tangible resources and fourteen b) intangible resources. The respondents

were asked to tick one of the three grades on low-medium-high scale. But in this question low has the meaning that resources are not homogeneous, and high has the meaning that resources are homogeneous.

The last questions, number fifteen a), was formulated to find if there exist any experience effects in the different businesses. The meaning with question fifteen b) is to find if there is any diffusion within the line of business of these experience effects. These two questions are connected to hypothesis number thirteen.

4.5 Analysis of the material

The materials from our study have been analysed to see if our hypotheses correspond with the reality. Each answer from the questionnaire has been cross-analysed between the different industries and between the different companies in the specific industry. Then our hypotheses have been compared with the answers, to see if they are in accordance or not. Finally the outcome of each industry has been analysed relatively to each other.

4.6 Reliability

According to Saunders, Lewis and Thornhill (2003, 101) there are four threats to reliability namely subject or participant error, subject or participant bias, observer error and observer bias.

Due to the season (Christmas time) and all the events that the employees attend at this time of the year, may have resulted that some subject or participant error have been included in our study. Subject or participant bias has very likely not been included in our research because the questions have addressed the line of business as a whole and not the company itself. Having a high degree of structure in our questionnaire has reduced the issue of observer error. The structured design of our questionnaire (Appendix I) has reduced the observer bias which otherwise might have influenced the respondents' answers.

4.7 Validity

Validity concerns about the question if the “findings are really about what they appear to be about” (Saunders et al 2003, 101). The results of the research were supposed to reflect the industry as a whole but may have reflected the responding company.

4.8 Criticism of methodology

It can be difficult to find significance from a single case or a few numbers of cases. However, this did not create a problem for us since the purpose of this dissertation was to create a model that is showing indicators. The model is showing if there are any certain indications about first-mover advantages or second-mover advantages in different industries or if it differs from industry to industry. The answers, from the bank industry, to our questions were very diversified. This may be due to that our questions did not fit this line of business.

Two of the factors (interest of managers, government interference) which influence the second-mover may also influence first-movers. However, according to the theories they are more likely to influence the second-mover and therefore we have used it as a second-mover advantage.

4.9 Summary

A mix of international and Swedish companies was included in our research. To receive a high frequency of responses and a high reliability of the answers we chose to use a questionnaire that was carried out through interviewing the respondents by telephone. This was done after developing hypotheses from the existing theory and industry information.

5 Analysis

In the following chapter an analysis of the empirical material will be presented. Due to the low rate of respondents the analysis only shows some weak indications about the situation in the industries.

The presented tables in this analysis contain information about the three industries. On each question the respondents could choose to answer low (1), medium (2) or high (3). Each row represent one industry and each column represent the answer from the questionnaire. The number in the matrix represents how many companies in the industry that has given the same answer.

5.1 Evaluation of hypothesis 1: Pre-emption of scarce assets

H1a: *There will not be any limits of assets regarding raw material in any of the three industries.*

Table 5.1 Result of research:

	Number of different grades		
	1	2	3
Ice cream	5		
Mobile phone	1	1	
Bank	5		

All respondents in the ice cream industry and in the bank industry believed that there were not any limits of raw material in their industry. The mobile phone industry had different opinions about the issue with one company stating that there were no limits and one company stating that there were medium limits in the industry.

Table 5.2 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	No limits	No limits	No limits
Outcome	No limits / medium limits	No limits	No limits

According to the interviews, the ice cream and the bank industry correlated with our hypothesis as the respondents stated that there are no limits when it comes to assets in their line of business. In the mobile phone industry there is to some extent limits of assets.

H1b: There exists a higher grade of spatial pre-emption in the bank industry and in the ice cream industry than in the mobile phone industry.

Table 5.3 Result of research:

	Number of different grades		
	1	2	3
Ice cream		2	3
Mobile phone	1	1	
Bank	3	2	

According to the respondents there is low (three answers) to medium (two answers) grade of spatial pre-emption in the bank line of business. This relationship seems to be similar in the mobile phone industry with one respondent answering low grade and one respondent answering medium grade of spatial pre-emption. There seems to be a medium to high grade of spatial pre-emption in the ice cream business, as three out of five stated that there is a high spatial pre-emption and two stated that there is a medium grade.

Table 5.4 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Lower	Higher	Higher
Model	Lower/Medium	Lower/Medium	Medium/Higher

In this situation the hypothesis did not correlate with the answers from the questionnaire. Neither had any of the industries the same level as predicted nor did the bank industry and the ice cream industry have the same grade of spatial pre-emption.

H1c: Pre-emptive investment in plant and equipment is not used as a competitive strength in any of the three industries.

Table 5.5 Result of research:

	Number of different grades		
	1	2	3
Ice cream	3	2	
Mobile phone	2		
Bank	2	1	2

In the ice cream industry three of five firms thought that there is a low extent of pre-emptive investment in plant and equipment, and the rest thought there is so to a medium extent. In the bank industry the interviewees was even more disunited. Both companies in the mobile phone industry thought that there is a low influence of the opportunity to use pre-emptive investments as a competitive strength.

Table 5.6 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Low	Low	Low
Model	Lower		Lower/Medium

This hypothesis does not completely correlate with the answers from the questionnaire. The responses from the mobile phone industry correlated with the hypothesis and the ice cream industry correlated with the hypothesis to some extent. The bank industry can not be analysed because of the diversified responses. The reason to the different responses may be that the respondents have either misunderstood the question or that the question has been written incorrectly. The hypothesis predicted that all the industries should have the same opinion (i.e. low usage) about pre-emption of investments in plant and equipment. The outcome of the research showed that the ice cream industry has more usage of pre-emption of investments in plant and equipment than the mobile phone industry.

5.2 Evaluation of hypothesis 2: Scale effects

The influence of scale effects is higher in the mobile phone industry and in the ice cream industry than in the bank industry.

Table 5.7 Result of research:

	Number of different grades		
	1	2	3
Ice cream	1	4	
Mobile phone			2
Bank	2	2	1

In the ice cream industry four out of five agreed about that the influence of scale effects are medium. The fifth respondent believed that the influence of scale effects was low. The mobile phone industry was unanimous in their opinion about high influence of scale effects. The bank industry thought differently with two responses each on low and medium influence and one response on high influence of scale effects.

Table 5.8 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Higher	Higher	Lower
Model	Higher	Low/Medium	Medium

The influence of scale effects in the mobile phone industry is high as predicted in the hypotheses. The opinion in the bank industry regarding the influence of scale effects differed between the respondents but a tendency to low/medium influence of scale effects was shown. This, however, were not predicted in the hypothesis. The influence of scale effects in the ice cream industry was found to be medium, which was higher than predicted in the hypothesis. The outcome of the research showed that the mobile phone industry and bank industry did not have the same influence of scale effects as predicted in the hypothesis.

5.3 Evaluation of hypothesis 3: Technological leadership

The level of technological leadership is more important in the mobile phone business than in the ice cream and bank businesses.

Patent

Table 5.9 Result of research:

	Number of different grades		
	1	2	3
Ice cream	5		
Mobile phone			2
Bank	5		

All respondents in the different industries were unanimous in their opinion about the importance of technological leadership regarding patents. The ice cream and the bank industry had both low opinions about the importance of the issue of patenting. The importance of patenting is high in the mobile phone industry.

Table 5.10 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Higher	Lower	Lower
Model	Higher	Lower	Lower

The hypothesis fully correspond with the answers from the interviewees, as the level of technological leadership, when it comes to patents, is more important in the mobile phone industry than in the other two businesses. The importance of patents was at the same level in the bank and ice cream industry, which also corresponds with the hypothesis.

Research and development

Table 5.11 Result of research:

	Number of different grades		
	1	2	3
Ice cream	3	1	1
Mobile phone			2
Bank	3	2	

The answers from the respondents in the ice cream industry were scattered. Three respondents believed that the importance of research and development were low and the other two believed medium and high importance respectively. The importance of research and development in the mobile phone industry were high. The opinion in the bank industry was divided between low (three respondents) and medium (two respondents) importance of research and development.

Table 5.12 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Higher	Lower	Lower
Model	Higher	Lower/Medium	Lower/Medium

The outcome of the research corresponds with the hypothesis in the mobile phone industry. The bank and ice cream industry had higher importance of research and development than predicted in the hypothesis. However, the bank and ice cream had the same level of importance of research and development, which corresponds with the hypothesis.

5.4 Evaluation of hypothesis 4: Network externalities

The influence of network externalities is more important in the bank industry than in the ice cream industry and in the mobile phone industry.

Table 5.13 Result of research:

	Number of different grades		
	1	2	3
Ice cream	5		
Mobile phone		1	1
Bank	2	2	1

All the respondents in the ice cream industry believed that the importance of network externalities was low. In the mobile phone industry the respondents was divided between medium and high importance. The opinion about the importance of network externalities were divided in the bank industry with two respondents believing low importance, two respondents believing medium importance and one respondent believing high importance.

Table 5.14 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Lower	Higher	Lower
Model	Medium/Higher	Lower/Medium	Lower

The only industry, which the outcome corresponded with the hypothesis, was the ice cream industry that stated a lower importance of network

externalities. The mobile phone industry had a higher importance than predicted in the hypothesis. In the bank industry the situation was the opposite with the respondents believing that the importance were lower than predicted. The hypothesis states that network externalities should be more important in the bank industry. The outcome showed that the mobile phone industry is the line of business that has the highest degree of importance of network externalities. The bank business has a large variance in the answers. Maybe this is due to the fact that the wording of the stated question was incorrect. However, an inclination towards lower and medium importance can be seen. The hypothesis also predicted that the extent of importance should be the same in the mobile phone and in the ice cream industry but the results showed that this was not the case.

5.5 Evaluation of hypothesis 5: Brand loyalty

Brand loyalty has more effect on the ice cream industry than on the bank industry and on the mobile phone industry.

Table 5.15 Result of research:

	Number of different grades		
	1	2	3
Ice cream		1	4
Mobile phone			2
Bank			5

The respondents were unanimous in the mobile phone and in the bank industry with stating that brand loyalty has a high effect on their industries. In the ice cream industry the result was nearly the same with one exemption; one respondent answered medium effect.

Table 5.16 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Lower	Lower	Higher
Model	Higher	Higher	Higher

As stated in the hypothesis the effect of brand loyalty is quite high in the ice cream industry, but to our surprise it is even higher in the other two industries. This does not correspond with the theoretical framework. The hypothesis predicted that the bank and mobile phone industry should have the same low importance of brand loyalty. All three industries believed that there was a high effect of brand loyalty that was not predicted in the hypothesis.

5.6 Evaluation of hypothesis 6: Buyer switching cost

H6a: *The effect of uncertainty about the quality of competing products is higher in the mobile phone business and in the bank business than in the ice cream business.*

Table 5.17 Result of research:

	Number of different grades		
	1	2	3
Ice cream	5		
Mobile phone	2		
Bank	2	1	2

All the respondents in the ice cream industry and in the mobile phone industry believed that there was a low effect of uncertainty about competing products. The bank industry had a very diversified opinion about the subject with two respondents answering low effect and two respondents answering high effect and one respondent answering medium effect.

Table 5.18 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Higher	Higher	Lower
Model	Lower		Lower

The ice cream industry was the only industry that had the same level as predicted in the hypothesis. The hypothesis predicted that it should be different levels of effect of buyer switching cost regarding uncertainty in the mobile phone and ice cream industry. This was rejected by the outcome of the research, which showed that the two industries had the same conception about the effect of buyer switching cost regarding uncertainty. The respondents in the bank industry had very different opinions about the subject. The reason for this could be that the respondents have misunderstood the question or if the wording of the question has been incorrect. Another reason could also be that the respondents have different backgrounds with different values, which has had an effect on the answer.

H6b: The effect of buyer switching cost has more influence on the mobile phone line of business than on the ice cream line of business and on the bank line of business.

Table 5.19 Result of research:

	Number of different grades		
	1	2	3
Ice cream	4		1
Mobile phone	1	1	
Bank	3	1	1

Four out of five respondents in the ice cream industry believed that there was low buyer switching cost in their industry. The fifth respondent had a different opinion and believed that there was a high grade of buyer switching cost. The two respondents in the mobile phone industry had also different opinions about the subject; one of them believed that there was low

buyer switching cost and the other believed that there was medium buyer switching cost. The answers in the bank industry were also scattered with three respondents stating that there was low buyer switching cost. The other two respondents believed that there existed medium and high buyer switching cost respectively in their industry.

Table 5.20 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Higher	Lower	Lower
Model	Lower/Medium	Lower/Medium	Lower

The ice cream industry was the only industry that had the same level as predicted in the hypothesis. The outcome of the research showed that in the hypothesis the effect of the buyer switching cost has been overestimated in the mobile phone industry and underestimated in the bank industry. Contrary to the hypothesis the outcome of the research showed that the bank industry had a higher level of effect of buyer switching cost than the ice cream industry. The hypothesis also stated that the effect of buyer switching cost should be different between the mobile phone industry and the bank industry. The outcome showed that there was the same level of buyer switching cost.

5.7 Evaluation of hypothesis 7: Uncertainty

Uncertainty about competing products affects the mobile phone industry more than the ice cream industry and the bank industry.

Table 5.21 Result of research:

	Number of different grades		
	1	2	3
Ice cream	5		
Mobile phone		1	1
Bank	2		3

All the respondents in the ice cream industry believe that the effect of uncertainty about competing products has a low effect in their industry. The two respondents in the mobile phone industry believe that there are medium to high effect respectively in their industry. The respondents in the bank industry has scattered answers with two respondents believing that there is a low effect and three respondents believing that there are a high effect of uncertainty about competing products.

Table 5.22 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Higher	Higher	Lower
Model	Medium/Higher		Lower

The ice cream industry was the only industry that had the same level as predicted in the hypothesis. The mobile phone and the bank industry were predicted in the hypothesis that they should have the same level of uncertainty in their industry. Unfortunately the answers in the bank industry was too diversified to be able to perform an analyse. However, the mobile phone contained, as predicted, a higher level of uncertainty than the ice cream industry.

5.8 Evaluation of hypothesis 8: Cost disadvantages

The mobile phone industry is more affected by cost disadvantages than the ice cream industry and the bank industry.

Table 5.23 Result of research:

	Number of different grades		
	1	2	3
Ice cream	2	3	
Mobile phone		2	
Bank		3	2

Three of the respondents in the ice cream industry thought that their industry were medium affected by cost disadvantages. The other two respondents believed that the affect were low. The answers from the mobile phone industry showed that both respondents believed that the effect of cost disadvantages were medium. The respondents of the bank industry were also divided in their answers. Three respondents believing that the affect of cost disadvantages were medium. The remaining two respondents believed that the level of were cost disadvantages were high.

Table 5.24 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Higher	Lower	Lower
Model	Medium	Medium/Higher	Lower/Medium

None of the industries had the same level of cost disadvantages as predicted in the hypothesis. The mobile phone industry should, according to the hypothesis, have the highest grade of cost disadvantages in their industry but the outcome was that the bank industry had a higher grade of cost disadvantage. The hypothesis also predicted that the bank industry and the ice cream industry should have the same amount of cost disadvantage, which the research showed that they did not have.

5.9 Evaluation of hypothesis 9: Free-rider effects

The free-rider effects will mostly affect the mobile phone industry, and then the ice cream business and least affect the bank industry.

Table 5.25 Result of research:

	Number of different grades		
	1	2	3
Ice cream		3	2
Mobile phone	1		1
Bank		1	4

Three of the respondents in the ice cream business believed that there were medium free-rider effects in their industry. The remaining two respondents believed that there was a higher effect of free-riders. The answers from the mobile phone industry showed that they had different opinions with one respondent answering low effect of free-riders and the other believing high effect. Four out of five respondents in the bank industry believed that there was high effect of free-riders. The remaining respondent believed that the effect was medium.

Table 5.26 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Higher	Lower	Medium
Model		Higher	Medium/Higher

The outcome of the research was the total opposite of the hypotheses. The respondents in the mobile phone industry had very different opinions about the existence of free-rider effects and therefore this is not included in our model. In both the ice cream industry and the bank industry the respondents

answered medium and high, but it was a higher tendency of free-rider effects in the bank industry than in the ice cream industry. This outcome was the opposite of the prediction in the hypothesis.

5.10 Evaluation of hypothesis 10: Interest of managers

Companies in the bank business and in the ice cream industry are more likely than the mobile phone industry to grow through mergers than through innovations.

Table 5.27 Result of research:

	Number of different grades		
	1	2	3
Ice cream		4	1
Mobile phone	1	1	
Bank		5	

Four out of five respondents in the ice cream industry believed that growth in their industry was equally through mergers and innovations. The other one stated that it was through innovations. In the mobile phone industry one of the two respondents believed that companies grow through mergers. The other one believed that growth in his line of business is to an equally extent through mergers and innovations. All of the respondents in the bank industry stated that growth in their industry is equally through mergers as through innovations.

Table 5.28 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Higher	Lower	Lower
Model	Lower/Medium	Medium	Medium

The hypothesis predicted that the bank and the ice cream industry grow through mergers. The result showed that they have their largest growth equally through mergers and innovations. In the mobile phone industry there is a tendency to grow through mergers.

5.11 Evaluation of hypothesis 11: Government interference

The industry which is most affected by the government is the bank industry; the ice cream industry and the mobile phone industry are very little affected.

Table 5.29 Result of research:

	Number of different grades		
	1	2	3
Ice cream	5		
Mobile phone	1		1
Bank	2	1	2

All the respondents in the ice cream industry believed that the government did not interfere in their industry. The mobile phone industry had a diversified opinion about the government interference with one respondent answering low and the other one answering high interference. The bank industry was also diversified opinion about government interference, with two respondents believing low, one believing medium and two believing high.

Table 5.30 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Lower	Higher	Lower
Model			Lower

The ice cream industry is very little affected by the government and the result is in accordance with the hypothesis. The bank industry has a diversified opinion in this question. This might have arisen due a misunderstanding or to an incorrect wording of the question in the questionnaire. The mobile phone industry has also diversified opinions, which make us exclude those in the model.

5.12 Evaluation of hypothesis 12: Resource homogeneity

All three industries have homogenous tangible and intangible resources.

Tangible resources

Table 5.31 Result of research:

	Number of different grades		
	1	2	3
Ice cream		2	3
Mobile phone			2
Bank	3	1	1

Three of the respondents in the ice cream industry believed that there were a high grade of homogeneous tangible resources in their industry, and two that the grade were medium. All respondents in the mobile phone industry believed that tangible resources are homogeneous to a high grade in their line of business. In the bank industry three respondents believed that the extent of homogeneous resources were low. One believed that it was medium and one that it was high.

Table 5.32 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Higher	Higher	Higher
Model	Higher	Lower/Medium	Medium/Higher

Intangible resources

Table 5.33 Result of research:

	Number of different grades		
	1	2	3
Ice cream		3	2
Mobile phone	1	1	
Bank	2	3	

When it comes to intangible resources in the ice cream industry, two respondents answered that they are homogeneous to a high grade. The other three believed that there are homogeneous intangible resources to a medium extent. In the mobile phone industry one of the respondents answered that it exist homogeneous intangible resources to a low extend. The other respondent believed that it exists at a medium level. In the bank industry the answers stated that two out of five believed that intangible resources were homogeneous to a low extent and the other three believed they were homogeneous to a medium extent.

Table 5.34 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Higher	Higher	Higher
Model	Lower/Medium	Lower/Medium	Medium/Higher

The possibilities to gain the same resources for the companies in the chosen industries were not as equal as the hypotheses predicted. The ice cream industry has medium to high rate of homogenous resources and the tangible resources are more homogeneous than the intangible. The bank business has low to medium possibilities to gain equal tangible and intangible resources. The respondents' answers in the mobile phone industry showed a tendency towards similar possibilities to obtain the same tangible resources.

5.13 Evaluation of hypothesis 13: Experience effects

H13a: *Experience effects mostly gains the bank industry and less the mobile phone industry and the ice cream industry.*

Table 5.35 Result of research:

	Number of different grades		
	1	2	3
Ice cream	2	2	1
Mobile phone			2
Bank		3	2

The ice cream industry had some diversified answers with two respondents believing that the importance of experience is low, two respondents believed medium importance and one believed high importance of experience effects. The two respondents in the mobile phone industry both agreed on a high importance of experience effects. The bank industry had a divided opinion with three respondents answering medium importance and two respondents answering high importance.

Table 5.36 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Lower	Higher	Lower
Model	Higher	Medium/Higher	Lower/Medium

The outcome of the research did not correspond with the hypothesis. None of the industries had the same level of importance as was predicted in the hypothesis. The bank industry was supposed to have the highest importance of experience effects, but instead it was the mobile phone industry that gains mostly of experience effects.

H13b: *Diffusion of experiences is more common in the bank industry than in the mobile phone industry and least common in the ice cream industry.*

Table 5.37 Result of research:

	Number of different grades		
	1	2	3
Ice cream	3	2	
Mobile phone		1	1
Bank		1	4

Three of the respondents in the ice cream industry thought that the diffusion was low in their industry. The two remaining respondents believed in a medium diffusion. One respondent in the mobile phone industry answered medium diffusion and one respondent answered high diffusion. In the bank industry four out of five answered that there are a high diffusion and one that there is a medium diffusion in their line of business.

Table 5.38 Hypothesis compared with the outcome:

	Mobile phone	Bank	Ice cream
Hypothesis	Medium	Higher	Lower
Model	Medium/Higher	Higher	Lower/Medium

The outcome of the research showed almost the same that the hypotheses predicted. The ice cream industry has a low to medium diffusion of experiences and the bank has the highest rate of diffusion of experiences. The bank industry was predicted in the hypothesis that they should have the highest grade of diffusion and the ice cream should have the lowest grade of diffusion. This was confirmed by the research.

6 Conclusion

In this chapter a conclusion of the research will be presented, including our revised and final model.

In the different industries there are different factors that indicate first-mover advantages and second-mover advantages. The indications of which factors influence each of the different industries are stated below with a revised and final model.

6.1 The mobile phone industry

6.1.1 First-mover advantages:

From the following factors the mobile phone industry indicates to have more influences than other industries:

- Pre-emption of raw material
- Scale effects
- Technology leadership regarding patents
- Technology leadership regarding Research and Development
- Network externalities
- Experience effects regarding learning effects

From the following factors the mobile phone industry indicates to have the same influences as other industries:

- Brand loyalty
- Buyer switching cost regarding uncertainty

From the following factor the mobile phone industry indicates to have lower influences than other industries:

- Pre-emptive investments in plant and equipment

6.1.2 Second-mover advantages:

From the following factors the mobile phone industry indicates to have more influences than other industries:

- Uncertainty regarding competing products
- Resource homogeneity regarding tangible resources

From the following factor the mobile phone industry indicates to have lower influences than other industries:

- Interest of managers

The following questions could not be answered because of too diversified answers from the respondents:

- Free-rider effects
- Government interference

6.2 Ice cream industry

6.2.1 First-mover advantages

From the following factors the ice cream industry indicates to have more influences than other industries:

- Spatial pre-emption
- Pre-emptive investment in plant and equipment

From the following factors the ice cream industry indicates to have the same influences as other industries:

- Brand loyalty
- Buyer switching cost regarding uncertainty

From the following factors the ice cream industry indicates to have lower influences than other industries:

- Network externalities
- Buyer switching cost
- Experience effects regarding learning effects
- Diffusion

6.2.2 Second-mover advantages

From the following factor the ice cream industry indicates to have more influences than other industries:

- Resource homogeneity regarding tangible resources

From the following factors the ice cream industry indicates to have lower influences than other industries:

- Uncertainty
- Cost disadvantages
- Free-rider effects
- Government interference

6.3 Bank

6.3.1 First-mover advantages

From the following factor the bank industry indicates to have more influences than other industries:

- Diffusion

From the following factor the bank industry indicates to have the same influences as other industries:

- Brand loyalty

From the following factor the bank industry indicates to have lower influences than other industries:

- Scale effects

The following questions could not be answered because of too diversified answers from the respondents:

- Pre-emptive investment in plant and equipment
- Buyer switching cost

6.3.2 Second-mover advantages

From the following factors the bank industry indicates to have more influences than other industries:

- Cost disadvantages
- Free-rider effects

From the following factor the bank industry indicates to have lower influences than other industries:

- Resource homogeneity regarding tangible resources

The following questions could not be answered because of too diversified answers from the respondents:

- Uncertainty
- Government interference

6.4 The revised model of first- and second-mover advantages

After having done the empirical research we revised our model. Some of the outcome were unexpected and did not follow the theories and therefore our model had to be revised according to the empirical research. Unfortunately, some of the answers could not be analysed and are therefore blank in the model. This phenomenon occurred mostly in the bank industry and in the mobile phone industry.

Table 6.1 The revised model indicating first-mover and second-mover advantages

First-mover advantages:	Mobile phone	Bank	Ice-cream
Pre-emption of raw material	No limits/Medium	No limits	No limits
Spatial pre-emption	Lower/Medium	Lower/Medium	Medium/Higher
Pre-emptive investments	Lower		Lower/Medium
Scale effects	Higher	Low/Medium	Medium
Technology leadership (Patents)	Higher	Lower	Lower
Technology leadership (R&D)	Higher	Lower/Medium	Lower/Medium
Network externalities	Medium/Higher	Lower/Medium	Lower
Brand loyalty	Higher	Higher	Higher
Buyer switching cost (uncertainty)	Lower		Lower
Buyer switching cost	Lower/Medium	Lower/Medium	Lower
Experience effects	Higher	Medium/Higher	Lower/Medium
Experience effects (diffusion)	Medium/Higher	Higher	Lower/Medium
Second-mover advantages:	Mobile phone	Bank	Ice-cream
Uncertainty	Medium/Higher		Lower
Cost disadvantages	Medium	Medium/Higher	Lower/Medium
Free-rider effects		Higher	Medium/Higher
Interest of managers	Lower/Medium	Medium	Medium
Government interference			Lower
Resource homogeneity (tangible)	Higher	Lower/Medium	Medium/Higher
Resource homogeneity (intangible)	Lower/Medium	Lower/Medium	Medium/Higher

6.5 Discussion

“None of the questioned research practices will find a first mover advantage no more often than can be accounted for by random statistical error alone”
(VanderWerf & Mahon, 1997)

Our research has shown some indications that there are different amount of influences from the theories. There might be a possibility that the first-mover advantage and second-mover advantage is only a statistical error. Instead the issue of general competitive advantage might be a better way to look at different advantages. The ability to shape the odds in your favour may be more important than to be the first on the market.

6.6 Further research

Suggestions of further research:

- To analyse a first-mover and a second-mover in the same line of business and to see to what extent the different theories have affected them.
- Which first/second mover advantages are relevant for the service sector?
- Studying first/second movers in emerging product markets.
- Differentiation geographical versus product market.

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Appendixes

Appendix I – The Questionnaire

1. Vilket företag representerar Ni? _____

2. I vilken grad anser Ni att det finns begränsningar, vad gäller:
 - a) Tillgång till unika råvaror?

Mycket begränsade	Medel	Ej begränsade
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

 - b) Utrymme för antal företag inom Ert geografiska område (Sverige)?

Litet utrymme	Medel	Stort utrymme
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. I vilken grad kan företag använda överkapacitet för att sänka priser och därigenom hålla konkurrenter borta?

Låg	Medel	Hög
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. I vilken grad anser Ni att företag i Er bransch kan sänka sina kostnader per enhet genom ökad produktion, så kallad skalekonomi?

Låg	Medel	Hög
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. I vilken grad anser Ni att företagen i Er bransch kan dra fördel av:
 - a) Patent?

Låg	Medel	Hög
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

 - b) Forskning och utveckling?

Låg	Medel	Hög
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. I vilken grad anser Ni att det finns fördel för era användare av produkterna att även andra använder produkterna? (Ex Microsofts produkter)

Låg	Medel	Hög
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. I hur stor grad anser Ni att kunderna är lojala mot ett varumärke och gör därmed återköp:

Låg	Medel	Hög
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. I vilken grad anser Ni att kunderna köper era produkter på grund av:
a) Osäkerhet om konkurrenternas kvalitet?

Låg	Medel	Hög
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b) Byte till konkurrenternas produkter som innebär merarbete/merkostnad?

Låg	Medel	Hög
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. I hur stor grad anser Ni att kunden är osäker om vilken produkt som är mest anpassad till hans/hennes önskemål?

Låg	Medel	Hög
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. I vilken grad finns det en strategisk risk genom att vara först på marknaden relativt att avvakta?

Låg	Medel	Hög
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. I vilken grad finns det en risk för att företag imiterar andras produkter istället för att utveckla nya produkter?

Låg	Medel	Hög
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. I vilken grad anser Ni att tillväxt sker genom inre innovationer relativt uppköp?

Låg (dvs uppköp)	Medel	Hög (dvs innovation)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. I vilken grad finns det en risk att myndigheter påverkar förutsättningarna i Er bransch genom bidrag eller dyl.:

Låg	Medel	Hög
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. I hur stor grad har företagen i branschen likartade möjligheter att skaffa resurser vad gäller:

a) Materiella tillgångar (kapital, maskiner m.m.)?

Låg	Medel	Hög
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b) Immateriella tillgångar (varumärken, teknologisk kunskap m.m.)?

Låg	Medel	Hög
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. I vilken grad anser Ni att:

a) Efterhand som man skaffar sig erfarenheter inom organisationen kan produktionskostnader sänkas?

Låg	Medel	Hög
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b) Dessa erfarenheter (se 15a) sprider sig inom branschen?

Låg	Medel	Hög
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix II – Answers from the questionnaire

Ice cream industry

	Company A	Company B	Company C	Company D	Company E
2a	No limits	No limits	No limits	No limits	No limits
2b	Small space	Medium	Medium	Small space	Small space
3	Low	Medium	Low	Low	Medium
4	Low	Medium	Medium	Medium	Medium
5a	Low	Low	Low	Low	Low
5b	High	Low	Low	Low	Medium
6	Low	Low	Low	Low	Low
7	High	High	High	Medium	High
8a	Low	Low	Low	Low	Low
8b	Low	Low	High	Low	Low
9	Low	Low	Low	Low	Low
10	Low	Low	Medium	Medium	Medium
11	High	Medium	Medium	Medium	High
12	Medium	Medium	High	Medium	Medium
13	Low	Low	Low	Low	Low
14a	High	High	Medium	High	Medium
14b	High	Medium	Medium	High	Medium
15a	High	Medium	Low	Low	Medium
15b	Low	Medium	Low	Low	Medium

Mobile phone industry

	Company F	Company G
2a	Medium	Medium
2b	Large space	Medium
3	Low	Low
4	High	High
5a	High	High
5b	High	High
6	High	Medium
7	High	High
8a	Low	Low
8b	Medium	Low
9	High	Medium
10	Medium	Medium
11	High	Low
12	Low	Medium
13	High	Low
14a	High	High
14b	Medium	Low
15a	High	High
15b	High	Medium

Bank industry

	Company H	Company I	Company J	Company K	Company L
2a	No limits	No limits	No limits	No limits	No limits
2b	Large space	Large space	Medium	Large space	Medium
3	Medium	Low	High	High	Low
4	Medium	High	Medium	Low	Low
5a	Low	Low	Low	Low	Low
5b	Medium	Medium	Low	Low	Low
6	Medium	Medium	Low	Low	High
7	High	High	High	High	High
8a	High	High	Low	Medium	Low
8b	Low	Low	Low	Medium	High
9	Low	High	High	High	Low
10	Medium	Medium	High	High	Medium
11	Medium	High	High	High	High
12	Medium	Medium	Medium	Medium	Medium
13	Low	High	Low	Medium	High
14a	Low	Medium	Low	Low	High
14b	Medium	Medium	Low	Low	Medium
15a	High	High	Medium	Medium	Medium
15b	High	High	High	High	Medium