CVC Unit or CVC fund:
what is the best structure for innovation

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Abstract

This study is aimed at analyzing the differences of the CVC fund and the CVC unit. These structures have different effects on the innovation performance of the corporations. The research is focused on the automotive industry. The research is a inductive content analysis in which documents are studied. The study is focused on the following key aspects considering the CVC fund and the CVC unit: innovation, knowledge sharing, motivation, investments and structures. This research reveals differences in the structures and the effects it has on the innovation performance of the corporations.

The research provides insights in the cases that are selected, the performed investment are identified according to Chesbrough (2002). This gives insight in the objective of the cases and the link to the operational capabilities of the ventures. Furthermore the motivation of the structures, especially after failure is a key aspect in this research (Eggers and Soh,2014). The focus and extra activities the CVC fund has regarding innovation and investing results in more risks and more failures than the CVC unit. It is discovered that in the circumstances of the cases these failures lead to a motivation to change and these changes lead to a better performance. The extra risks, activities, failures and motivation make sure the CVC funds have a better performance than the CVC units

Keywords: Innovation perfomance, investment, motivation, failure, corporate venture capital structures

1.Introduction

In the time of fast technological changes and a lot of entrepreneurial ventures that aim to invest and produce new technologies, corporate venture capital activities have experienced significant growth in the last couple of years (MacMillan et al., 2008; Dushnitsky,2006). The CVC activities increased 19% over 2016 in deals completed and 18% in total capital invested. In a time period from 2013 to 2017 the total capital invested went from 9.9 billion to 31.2 billion. Capital can be invested in multiple ways ranging from internal R&D to acquiring a business. This increase of corporate venture capital activities also comes with different types of corporate venturing such as incubators and accelerators which respectively help start-ups to grow by mentoring or investing. Another method to pursue innovation by investing that is recently on the rise is that of creating an independent corporate venture capital arm. Some companies keep their corporate venture capital unit internal. This raises the question which way of pursuing innovation creates a better performance. In recent research it is determined that CVC is a suitable strategy for acquiring external knowledge for established firms (van de Vrande 2013; Dushnitsky and lenox, 2006) and has confirmed that CVC activities are beneficial for the innovation performance of the firm (Dushnitsky and Lenox, 2006; Bierwerth et al., 2015), prior resource has not paid substantive attention to the differences in the way CVC activities are structured and their effect on the firm's performance. Therefore, this research aims at addressing this practical difference in CVC structures. In this area an interesting variable that is noticeable is the level of involvement of the CVC fund and the operating units. The level of involvement between the units varies widely across companies (Block and MacMillan, 1993; Gompers and Lerner,1998). The difference we detected is that of a tightly structured program or unit within the company and a looser structured wholly owned subsidiary or fund. With the more tightly structured programs the CVC activities are a unit inside the company that works together with operating business units to perform all CVC activities, including analysing prior to financing and monitoring post-investment (e.g., Carcompany). The loose structured programs are the wholly owned funds that are launched by the corporation to focus on CVC investments (e.g., BMW i Ventures). These venture groups or corporate funds have similar objectives and similar personnel with the same background as the CVC unit within in the company (Dushnitsky and Shaver, 2009).

The organizational and incentive structure is different in the venture funds. They are subsidiaries that have much higher incentive-based compensation and it changes the linkages between the subsidiary and the operating units of the parent company. On this variable the

CVC units and venture funds differ (Gompers and Lerner,2004). More differences can be found in the fact that the tight structured CVC units can be more prone to the fear of disclosing information of the venture, since the incentives of the CVC personnel are aligned with the parent's success and are closer so there is more exchange of information with other units, therefore a tight program may result in fears of imitation for the venture (Dushnitsky, 2006; Dushnitsky and Shaver, 2009).

Besides, the structure of the tight corporate programs can be less successful, since their process of selecting and managing an investment can be intervened by other business practices (Gompers and Lerner, 2004). There are some benefits that may outweigh the costs for tight structured programs, as the strategy literature on complementaries mentions that the firm can benefit from closely related activities (Athey and Stern,1998). They have more in-depth knowledge of the business, which makes them more effective at selecting ventures and makes it easier to add value to the venture ones the investments are made (Athey and Stern,1998; Gompers and Lerner,2004). It can however be discussed that the looser structured separate owned subsidiary has the same knowledge for adding value since they are still close to the parent company, without the distortion of the investment process by other units since they are primarily focused on pursuing CVC investments. Therefore, this topic is important to investigate, since CVC is a growing trend and companies could benefit from knowing what method is the most beneficial for their firm performance. The research will make a contribution to the practical problem of having to decide the structure of your CVC activities, it will also add to the extensive research on CVC activities and firm performance by focusing on structuring which is a less mentioned part in the literature. This provides more insight in the choice between a CVC unit or a CVC fund, aimed at optimizing the way of structuring for your CVC activities. Which makes this research a test case for examining the impact of organizational structure on investment performance and leads to the following research question: How do the CVC unit and CVC fund differ in terms of innovation performance?

2. Theoretical Framework

In this chapter the key concepts will be discussed. Besides the key concepts there will be a deeper understanding of the theory and a framework will be created to answer the main research question. The literature provides us with expected relationships and concepts. In this research there are several key concepts that will be discussed extensively. The most discussed concept is that of corporate venture capital. To get a clear view of the concept it is important to distinct the goal of corporate venture capital which is innovation. Through innovation

companies seek to acquire strategic or financial benefits, which stimulate their firm performance.

2.1 Innovation

To capture the essence of the research it is important to define the broadly interpreted concept which is innovation. The goal of corporate venture capital is innovation, which makes innovation a key concept of this study. From an overall perspective to capture the definition as broad as possible you can define innovation as an iterative process initiated by the perception of a new market and/or new service opportunity for a technology-based invention which leads to development, production, and marketing tasks striving for the commercial success of the invention (Garcia and Calantone, 2002). In this definition you can find the technological development of an invention that needs the introduction to a market which is the primary goal of investing in start-ups to acquire these technological developments and by the means of the acquirer introduce it to the market because an innovation differs from an invention in that it provides economic value (Garcia and Calantone, 2002). Investing is getting more frequent since innovation is fast paced and technological changes are more common, the firms are also limited in their capabilities to create innovations internally (Henderson,1993). The firms face difficulties in generating innovations because they are not able to integrate diverse knowledge sets within one single company. There are constraints on the possibilities to create and share knowledge within a firm, therefore they lack the internal knowledge needed to innovate. Therefore, companies seek the knowledge externally and frequently invest and pursue the iterative process of innovation. Besides it is a fast way to buy innovation, which is in essence what corporate venture capital tries to do, therefore the focus is on that part of innovation. By acquiring many start-ups, they build up the knowledge and gain more and more knowledge every time to pursue technological development of a product in an iterative process. There are multiple ways to innovate which is discussed later, but also multiple types of innovation which one being a disruptive innovation. A disruptive innovation is a new use for a technology that breaks the business models of companies unable to integrate and adapt with it (Christensen et al., 2016). So besides iteratively innovating another goal of corporate venture capital is to avoid being unable to integrate and adapt to a disruptive innovation and preferably acquirer the disruptive innovator. Now it is clear what corporate venture capital tries to pursue in innovation and technological development, it is important to define corporate venture capital.

2.2 Corporate Venture Capital structures

There are multiple processes to obtain innovation. The result of this is that there are also multiple ways to structure for innovations or methods to pursue innovation. It is clear however that companies need to invest to get innovation, this can be in their own processes to stimulate learning and transfer of knowledge or external acquiring of knowledge. Regarding to external acquiring of knowledge corporate venture capital is a frequently used method. There is no perfect way of externally acquiring knowledge. Venture capital is just one way that also can be structured in multiple ways. The question remains which way of structuring is more beneficial. To answer this question the different methods need to be defined to eventually compare the different methods or ways of structuring.

2.2.1 Corporate Venture Capital

The history of corporate venture capital is defined by periods of rapid growths but also periods of decline. At the beginning of the 21st century the third wave of CVC activity appeared, after it was first mentioned in the 1960s as an investment method (Dushnitsky, 2006). After a dip in the early 2000s the next wave of CVC activities has been steadily growing reaching historically high figures (MacMillan et al., 2008). The cyclical nature of CVC is argued to be the result of the structural problems that occur. This problem can be seen from two perspectives that of the start- up that needs investors and that of the corporation that seeks knowledge and financial gains. In this research we will take the perspective of the latter and define corporate venture capital as an equity or equity-linked investment in young, privately held companies by a corporation or a corporate venture capital fund which is set as a subsidiary of the corporation (Henderson and Leleux, 2001; Maula,2001). These corporate venture capital investments have two characteristics their objective and the degree to which the investing company and the start-up are linked. The objective is mainly the already mentioned innovation but there are multiple benefits that corporations can achieve from corporate venture capital investments. The investment can be focused on strategic benefits, they are made primarily to increases the sales and profits of the corporation's own businesses. A company making a strategic investment seeks to identify and exploit synergies between itself and a new venture (Chesbrough, 2002). The investment can also be focused on financial benefits with this kind of investment the company is primarily aimed at getting returns, it is believed that corporates have a benefit since they have superior knowledge about where to invest in to get better returns (Chesbrough, 2002). A deeper understanding of the financial and strategic benefits will be provided in this chapter. Besides the objective to gain benefits the

other characteristic of CVC is the linkage distance between the investing company and the start-up. They can be tightly linked and use each other's resources, or the start-up adopts the practices of the investing company to create a tight link. The link can also be loose when the company's capabilities do not line up and they are not as complementary as with the tightly linked, still they can be good investments (Chesbrough, 2002). These two dimensions give us a framework of the kind of investments corporate venture capital can aim for according to its objective and the degree of linkage between your company and the start-up.

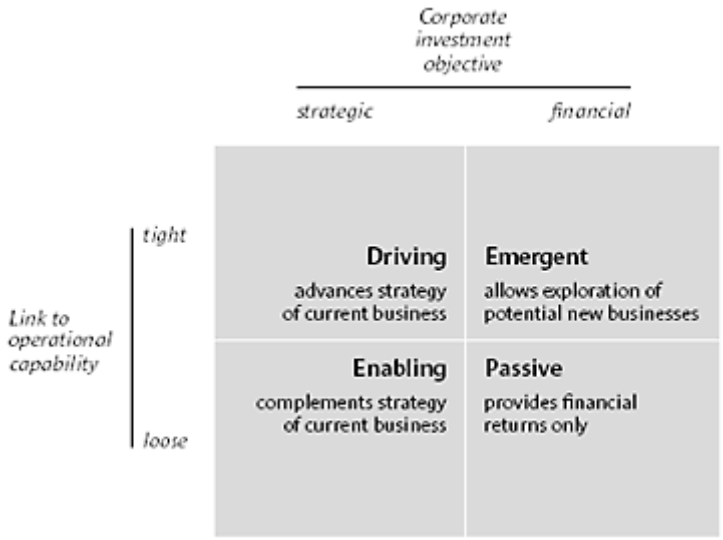

Figure 1. The corporate VC investments framework adopted from Chesbrough (2002)

With this framework it is possible to identify different investments based on their objective and linkage. This can help to identify different strategies that belong to different structures of CVC with variable results and outcomes. To identify these different types of investments in the cases that are researched it is mandatory to define the types of CVC investments (Chesbrough, 2002):

Driving investment: Characterized by a strategic rationale and tight links between a start-up and the operations of the investing company. These investments will sustain the current strategy. It is unlikely however to help with disruptive strategies or new opportunities

Enabling investment: Makes investments for strategic reasons but the venture is not tightly linked with the investing company's operations. The strategic reasons lay in the fact that the ventures are complementary to the current operations, having one product makes it have another.

Emergent investment: These kinds of investments do not enhance a company's current strategy but are tightly linked to the operating capabilities. These are in case the business environments changes and the strategy of the company shifts than these investments could become strategically valuable.

Passive investments: These investments are not connected to the strategy and are loosely linked with the operational capabilities. The corporation does not have the means to achieve advantages for its own business, primarily focussed on financial gains.

Now there is a clear distinction between different CVC investment types. The CVC investments are a way to enhance innovation in a company as already mentioned before. It enhances the innovation processes by creating synergies between the start-up and the investing company, CVC programs can be used to pursue innovation (Chesbrough, 2002). As we established the strategic or financial reason to run a CVC program could differ. Some companies use a more balanced approach by exploiting and exploring opportunities at the same time by linking them to operational capabilities. While other corporations focus on exploring opportunities but do not exploit them. This is mainly because the CVC program also relies on the other innovation processes within the company, the benefits of a CVC program can be explorative by providing insights in new technologies which results into innovation. It can also provide complementary technologies and exploit existing technologies and therefore result into iterative innovation (Napp and Minshall, 2011). This part is which makes the CVC program value able for the corporations since exploiting and exploring benefits by investing in start-ups leads to revenue growth and increases the existing knowledge and capabilities.

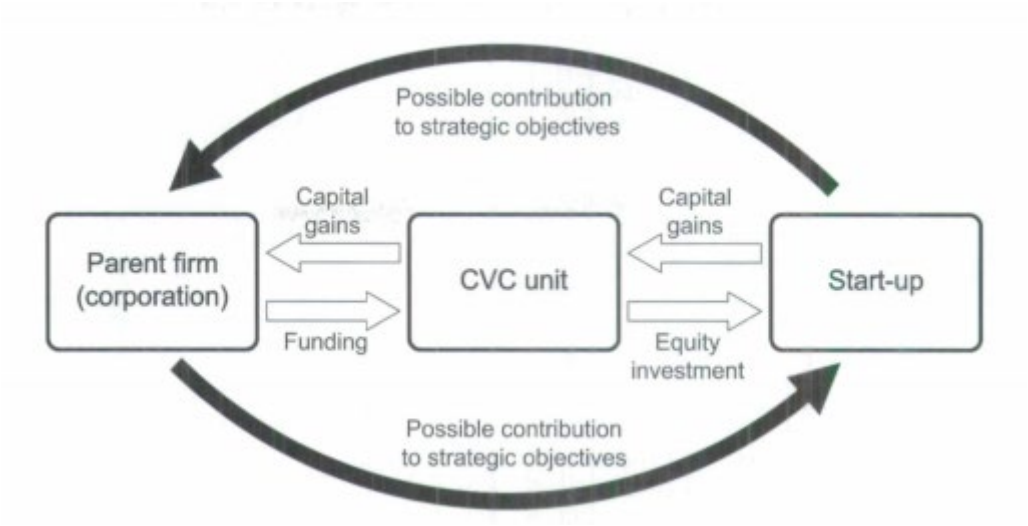

Figure 2. The roles in the CVC process retrieved from Ernst, Witt and Brachtendorf (2005)

This figure depicts the roles of the of the parties in a CVC process and it is established how this can lead to innovation. The roles however can be put in different structures with different links and performances as a result.

2.2.2 CVC Fund and CVC Unit

The following concept is the distinction between a venture capitalist subsidiary fund and that of the corporate venture unit within the company. The difference is that one is set up as a subsidiary outside the core of the company and the other is a unit within the company close to the processes and knowledge of the firm. The fund may have a disadvantage since the venture could be scared that the firm will use their information to better themselves but not the venture (Dushnitsky, 2006). The fund is aimed at financial gains and has higher incentives, which motivates the managers more than the managers in the unit (Chesbrough, 2000). The CVC unit also must deal with internal politics as a business unit and must compete over scarce resources, this could harm the CVC unit. The focus on financial returns of the CVC funds could have negative effects as well because if they do not provide financial returns immediately the top management could pull the plug faster, which gives more pressure to perform. Looking at practical research examples it is found that if the fund focusses on investing in firms with similar interests the performance will be the same (Gompers and Lerner, 1998). It is also found that units gain more strategical benefits from complementary ventures than a fund, since they are closer to the core business (Chesbrough, 2000). To make the distinction between the CVC unit and the CVC fund it is necessary to identify other methods of innovating and portray where the CVC unit and fund stand.

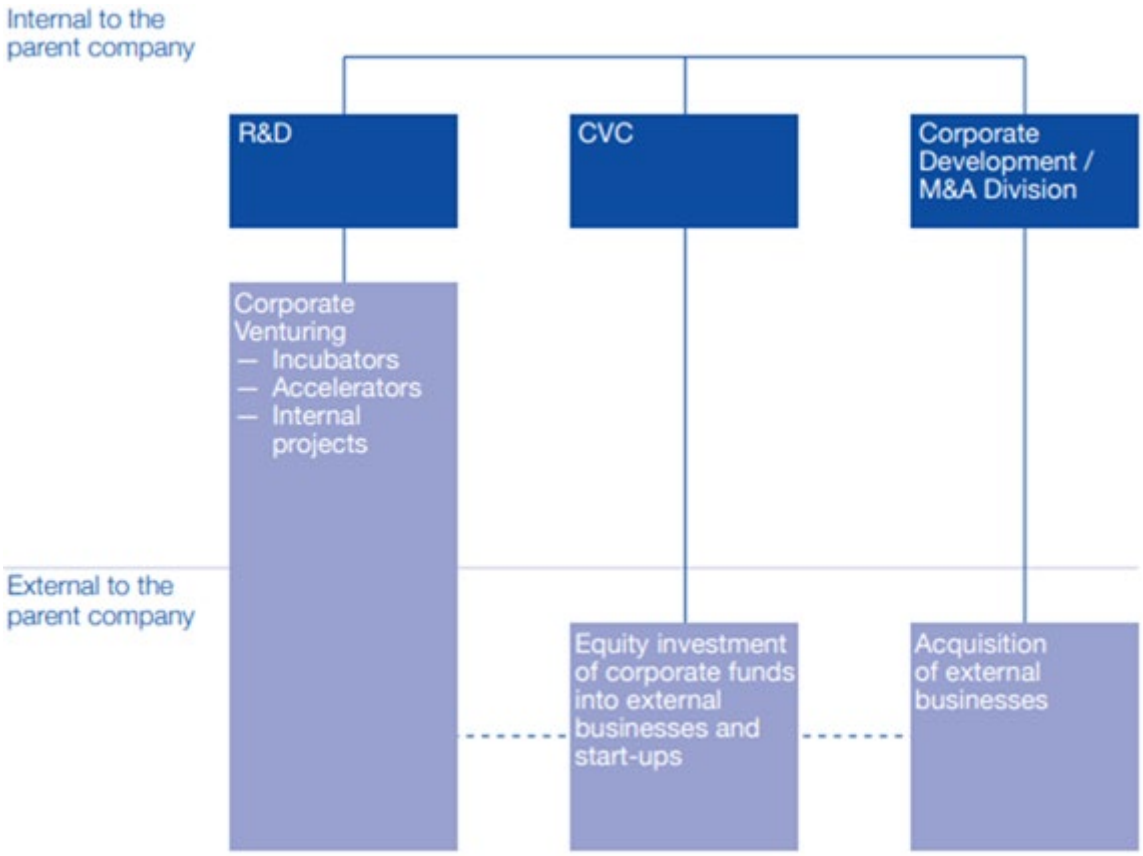

Figure 3. Corporate venturing structures and innovation methods

This figure portrays multiple structures of corporate venturing and innovation methods and provides an overview of the possibilities to achieve innovation. The most important distinction between the CVC unit and the CVC fund is that the unit is internal to the parent company and the fund is external to the parent company. There are however other methods to achieve innovation. R&D which stands for research and development is a process to create knowledge and pursue new technologies, products or services. The limitation to R&D is that it is costly and time consuming, and therefore one of the reasons corporations make the decision to invest in ventures for innovation. Other CVC structures are that of an incubator which are organisations that supply joint location, services, business support and networks to early stage ventures these are partly internal and partly external since it is usual to provide the venture with the corporation's services network. In this structure the corporation is coaching the venture in the early stages (Bergek and Norman, 2008). Accelerators which are also involved in coaching the earlier staged ventures, but not as with the incubators by letting them use the same services but by mentorship and coaching to improve the venture. Accelerators

are business entities that make seed-stage investments in promising companies in exchange for equity as part of a fixed-term, cohort-based program, including mentorship and educational components, that culminates in a public pitch event, or demo day (Dempwolf et al. 2014). The fact that it culminates in a public pitch event is because they try to make profit and accelerate the ventures in their development by the mentorship programs that is why the accelerator programs mostly have a limited time before they sell them with profit. It can now be identified which kind of structures and methods do not belong to the CVC unit and the CVC fund. Which we identify as the internal CVC unit and the external CVC fund both aimed at equity investments in young privately held companies.

2.3 Motivation and Failure

The objective of corporate venture capital is to gain strategic and/or financial benefits, with the ultimate goal to achieve innovation. What motivates the corporations to pursue these benefits through investing in ventures. The aspirations of a firm should be in line with the actual performance, otherwise the motivation to move on will be less. Eggers and Kaul (2018) proposed that the motivation to pursue a radical invention, with radical defined as incorporating fundamentally new knowledge and a significant improvement in performance (Wu et al., 2014), is optimal when the performance is slightly less than what is aspired by the corporation. The motivation to achieve the radical invention will lower when the performance either raises to high above the aspiration level or becomes too low under the aspiration level. When the performance is above aspiration level corporations tend to under invest because they think they are settled and therefore avoid risk and overinvest when the performance is significantly under the aspiration level by focussing too much on a specific part when they are resulting in even worse outcomes (Eggers and Kaul, 2018). The ability of a firm to develop the radical inventions influences the motivation of the corporation as well since the abilities increase the performance to be at the aspired level. Therefore, technological firms that aim at developing radical inventions in their area and have had strong performances in the past, enhance their abilities to develop radical inventions in that area. These effects are even stronger with corporations invested in multiple technological areas, since they are more prone to avoid risk when performing above aspiration level and tend to take greater risks when performing worse (Eggers and Kaul, 2018).

These risks can turn out to be good for the performance of the corporation, but they can result in a failure. The managers from these corporation learn from these failures and from the successes. With this new knowledge they can decide on their strategy and what

actions they need to take and what to invest in from which they can learn again creating a cycle. Failure can be seen as the before mentioned performance below aspiration. The area in which the corporation is trying to invest in has it effect on the result of failure. Failure can have a negative or positive impact on the firm performance (Egger and Suh, 2014). If the corporation has experience in a particular area, then it has the knowledge to coop and learn from failure. If the corporation is trying to invest in a new area and it fails it has no previous knowledge to rely on and therefore the corporation is more prone to misinterpreting the failure, resulting in a poor performance (Egger and Suh,2014). The failure does result in a motivation to correct the mistakes they made, unrelated to the area they invest in. Still the corporation needs to have the knowledge to take the right actions or else the corporation is not capable of coping with the failure which will affect the performance negatively. Knowledge plays a role in if the expectations of the corporations are realistic. It also plays a role in processing feedback, in order to learn from the failures, the corporation needs to have the knowledge to process the feedback into learning. Therefore, while failing a corporation learns and by having feedback it can adjust their expectations. This is a process of change; another possibility is that an action results in success and without feedback it will lead to repeating the action. Their success motivates different behaviour than failure (Egger and Suh, 2014). Therefore, organizational action can be explained by the knowledge and motivation that is present in an organisation.

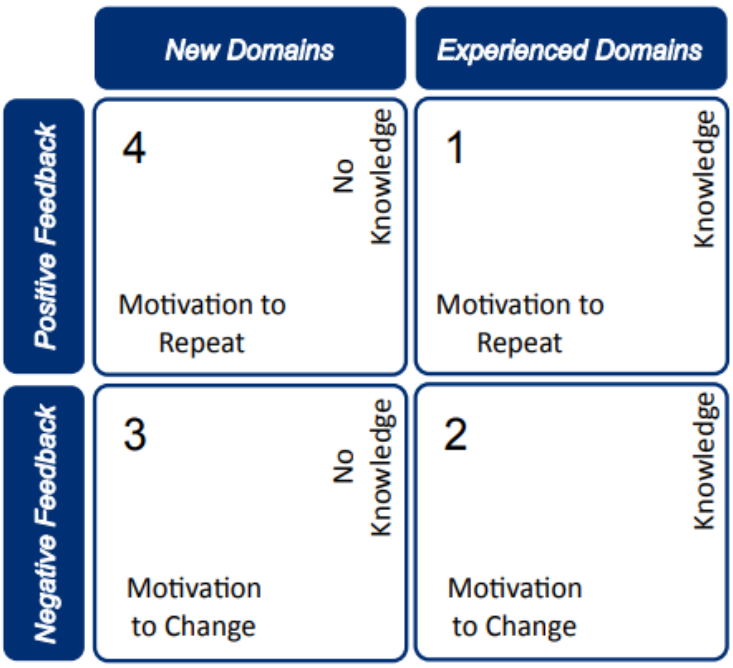

Figure 4. Motivation because of failure retrieved from Eggers and Soh (2014)

This figure is a clear presentation of the effects of failure or success and the area in which you invest in on your knowledge and motivation. Failure and motivation play a big part in innovation and trying to pursue firm performance.

2.4 Firm Performance

The research topic is whether this difference in structuring has any impact on the firm performance over a certain period. This research proposes that variance in firm performance can partly be explained by differences in structuring for the CVC activities and in turn the choice between a CVC unit or a CVC fund. In this research, since the goal of corporate venture capital is innovation, firm performance is defined as innovation performance. Innovation performance is a direct consequence from the abilities of the CVC unit or CVC fund which makes it a suitable indicator of the firm's performance. It is central to a firm's performance to create and exploit technological knowledge which comes from innovation mostly by providing new products and services. The creation and exploitation of technological knowledge is a key part of the economic performance and the survival of the firm (Cefis and Marsili, 2005). In order to improve the innovation performance, firms use CVC to create interorganizational knowledge sharing relationships and learn about new technologies that can better their firms performance (Dushnitsky, 2006). Firms most often undertake CVC to learn about novel technologies the CVC unit or fund can influence their innovation performance by the strategy it has with investing, such as investing in a variety of knowledge the strategies for innovation can be derived from the type of investments the corporations make. This can be done by recognizing the defined types of investments (Chesbrough, 2002). Then these investments can be linked with the goals it has and the operational linkages. The type of investment is determined by the preference of the firm, since some firms aim solely on financial returns while others aim at strategic benefits. The strategic benefits could outweigh poor financial returns. The strategic benefit could be new technologies and practices but also stimulating themselves to innovate more. When investing in ventures with complementary products this also could raise the demand of their products or future products. This research argues that the CVC unit is focused on strategic benefits and the CVC fund is aimed at financial benefits which could have a different effect on the innovation and firm performance.

2.5 Financial and Strategic Benefits

By having a CVC unit or a CVC fund the goal of the corporation is to achieve financial and strategic benefits through the investments they make. The financial benefit of an investment is the return on investment, the return consists of investment income and capital gains. The total return is the actual income over a period of time. The corporations are well established firms that have an advantage on other companies given their superior knowledge, therefore they have a better position to gain financial benefits from CVC. The corporations also have the possibility to enhance the value of the ventures because they have complementary assets therefore they can gain more financial benefits (Dushnitsky and Lennox, 2006). The superior knowledge of the established firms also gives them a better view on the ventures that are valuable which has more financial gains as a result. In contrary internal conflicts can emerge, the corporations might have weak incentives or information asymmetries within the corporation which balance out the benefits. Therefore, the corporation needs strategic benefits to compensate by indirect benefits. CVC could stimulate the value of the firm because it is an effective way of keeping an eye on the environment of the corporation for new technologies that can help or threaten the business. Most CVC programs are aimed strategic benefits and to extract these benefits from the relationship with the ventures the corporations need to facilitate coordination and the transfer of knowledge between the investing firm and the venture (Chesbrough, 2000). Which is also linked with the investment framework because having a close link with the operational capabilities makes it easier to coordinate and fulfil the transfer of knowledge. These strategic benefits lead to the innovative benefits. To achieve the knowledge and therefore the indirect strategic benefits of a CVC program they have various methods. The investors often take board seats or at least the right to observe, which gives them close access to the knowledge of the ventures activities and technologies (Dushnitsky and Lennox, 2006). Furthermore, corporations need to install organizational routines in order to stimulate learning by interaction between organizations and internal interaction (Daft and Lengel,1986). Another strategic benefit that could occur with CVC is the fact that the ventures might have complementary technologies which boosts the sales of the corporation's products and services. It is expected that the corporation pursue these strategic benefits because of their direct knowledge and indirect value creation, which results into more value then we the corporations primarily focus on financial returns. For the corporations that want to pursue strategic benefits it is important to put the necessary structures in to place to interact and coordinate with the ventures they invest in.

2.6 Conclusion

The structure impacts the firm performance, if the structure is set up properly this will attract investments and can maximize the company's funds, this in turn will help build the pillars of the company and turn into an increase in the firm performance, therefore structure plays a key role in the growth of the firm performance (Al-Matari et al., 2014). In this research it is discussed that the different structures and orientation of CVC funds or units influence the innovation performance and in turn the firm performance. Some firms conduct CVC not only for the financial benefits and return on investments but also for the strategic benefits. It is a possibility that these strategic benefits outweigh the poor financial returns in terms of justifying corporate venture capital investments. The investment might have a different motivation which also has its impact on the performance of the firm. The fact that the investment can result in a failure could also lead to more knowledge and eventually a better performance (Eggers and Soh,2014). New ventures could stimulate the innovativeness of the investor or produce complementary products and services that stimulate the current products. Those CVC funds or units with a strategic approach also take into account the coordination and transfer of knowledge (Benson and Ziedonis, 2009). This can be the result of the level of involvement and the loose or tight structure of the CVC unit or fund, which can be discussed as the more financial orientated loose structured fund and the strategic orientated tight structured unit, that both have different effects on the innovativeness of the corporations.

3.Methodology

In this chapter the method of research is discussed and explained. This is the way we can use the theory in practice. The sample that the research takes into account will be discussed and the sources this study gathers their data from. Furthermore, this chapter will outline the procedure of the data analysis and indicate what the limitations of the research project are along with the ethics of the research.

3.1 Research method

This research is aimed at explaining certain practical relationships in a natural setting. This betters the understanding of certain phenomenon by exploring and explaining this behaviour. This approach suits the qualitative method since in this research it is explored if there is a certain phenomenon in a real-life context. Within qualitative research it is possible to conduct an interview study or perform a case study. The commonly addressed definition of a case study is that of Yin (1984) that defines a case study as followed: "an empirical inquiry that

investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used." The case study is most suitable for this research because of the real- life context that is in line with explaining the relationship of certain variables within a firm. The firm is the real-life setting and perfect for a case study to explain or explore certain relationships within this firm. The complexity of a firm and all its variables cannot be addressed by an interview study since the information is always coming from the person who is interviewed. This makes the data that is retrieved from interview subjective, it is retrieved from someone inside the organization with a different perspective than someone outside the company. Within a case study it is possible to stay closer to the practical truth and observe information objectively about the variables this research is interested in.

In scientific research the distinction between qualitative and quantitative research is made, regarding CVC programs and research both methods are appropriate. Most researches however use a qualitative approach, such as Gompers and Lerner (1998) and Chesbrough (2002). These are based on interviews but also on in-depth analysis of the documents. Chesbrough (2002) is like this research a case study which shows the usefulness of the case study method. The quantitative researches such as Dushnitsky and Lennox (2006) and Athey and Stern (1998) have used panel data and Tobin's q or structural equation modelling to measure the firm value.

In these researches the gaps in the literature are also discussed. Dushnitsky and Lenox (2006) mention that strategically oriented CVC firms may owe their success to the specific practices they adopt to funnel knowledge from ventures to their internal research efforts and in addition Dushnitsky and Lenox (2005) adds that the performance of corporate venture capital programs may be driven by the structure of the programs themselves. Chesbrough (2002) adds that there might occur differences in programs that have different goals.

This study aims to fill this gap by performing a case study and exploring the practical effects different program structures have on the innovation performance of the corporations. In order to do this we made a theoretical based framework in chapter 2 to test the research question. This research focusses on the context of the cases with a better perspective on the different programs it is possible to gain knowledge about the innovation performance of different structures. This study is a multiple- case study and is aimed at exploring what kind of relationships are present. A limited number of cases are examined in-depth, which will strengthen the result of the research since there is more attention devoted to the in -depth analysis of a case (Yin, 2003).

3.2 Sample and sources

The sample of this research consist of corporate venture capitalist firms that have a unit for venture capitalist and firms that have a corporate funded subsidiary that acts as their corporate venture capital representative. To make a valid and reliable statement the number of cases is set on 4. To compare the both types of structures there will be 2 firms with the structure of CVC as a subsidiary group and 3 firms with the structure of the CVC unit. The goal is to explore the relationship as clear as possible for this to be achieved other variables need to stay consistent, therefore the firms will all be from the fortune 500 top 100. These firms mostly have CVC activities and are of similar size and wealth therefore this is a suitable criteria to select the firms. Besides, only firms from the automotive industry will be taken into account. Furthermore, in table 1 an overview of the case selection is shown based on number of employees, revenue, profit, R&D expenses, return on investments and investment focus since these are all indicators regarding to corporate venture capital.

Company	General Motors	BMW	Volkswagen	Daimler
Structure	CVC Fund	CVC Fund	CVC Unit	CVC Unit
Revenue (millions)	$166,380	$104,130	$240,264	$169,483
Profits (millions)	$9,427	$7,589.4	$5,973.3	9,428.4
Employees	>225,000	>120,000	>625,000	>280,000
R&D expenses (billions)	$7.3	$6.1	$4.7	$8.7
Return on investment (%)	6.8	7.13	4.72	6.69
Investment Focus	Automotive related technologies, advanced materials, infotainment, automotive cleantech	Autonomous driving, E-mobility, I, Iot, Energy Services	Autonomous driving, electric vehicles, car sharing.	Electric vehicles, autonomous driving, battery charging.

Table 1. Overview of the characteristics of the selected companies

General Motors is a multinational that originated in Detroit it is a manufacturer and distributor of vehicles and vehicle parts. It also has a financial services unit. GM is currently present in 35 countries and was founded in 1908 from 1931 to 2007 GM was the largest automobile manufacturer in the world. However, in 2009 General Motors corporation went

bankrupt and the new company general motors company originated by purchasing the majority of the assets and the brand of General motors. The brands that currently fall under the General motors group are Chevrolet, Buick, GMC, Cadillac, Holden, Wuling, Baojun and Jiefang. This also shows the primary focus GM has on North- America and China. In 2010 GM formed GM ventures a CVC fund in order to innovate by investing in new ventures, GM ventures says their focus is on the areas of automotive cleantech, infotainment, advanced materials, and other automotive-related technologies.

BMW is based and originated in Munich Germany, which is also the location of the headquarters. It was founded in 1916 and produces luxury automobiles and motor vehicles it also used to be into aircraft engines until 1945. It has always been there goal to aim at luxury vehicles and premium brands that maximize customer experience. BMW group brands are BMW m and i which are sub brands but also Rolls Royce and Mini. In 2011 BMW formed BMW i Ventures, BMW's 500 million CVC fund. It invests money and resources in start-ups in the fields of autonomous driving, digital car and automotive cloud, e-mobility, artificial Intelligence and data, industry 4.0, shared and on-demand mobility, customer digital life, and energy services.

Volkswagen is a car manufacturer from Germany that was founded in 1937 supported by the government that was under control of Adolf Hitler, the German Labour Front was the founder. The headquarters are in Wolfsburg and Volkswagen is one of the biggest automakers of the world, leading the worldwide sales of cars. Which is also projected in the number of employees and the revenue they have even though Volkswagen suffered significant consequences from emission scandals. Volkswagen is the largest car maker of Europe which is also shown by the number of brands they have. Under the Volkswagen group the following brands are present; Audi, Seat, Bentley, Bugatti, Lamborghini, Ducati, Scania, Skoda, Porsche and MAN. The innovation strategy of Volkswagen is named Strategy 2025 which is a process of change. Its overarching vision is to become a world-leading provider of sustainable mobility, the goal is to do this by collaborating and having good relations to achieve sustainable mobility.

Daimler is a German automobile manufacturer it was previously known as Daimler-Benz that was founded in 1926 and DaimlerChrysler in 1998 until 2007 when it became known as Daimler. The headquarters are in Stuttgart and Daimler produces cars, busses, trucks and motorcycles. In 2017 Daimler sold over 3.3 million vehicles making it the 13 largest car manufacturers of the world in units sold but it is the largest truck manufacturer of the world. Daimler has a couple brand being Mercedes and Smart for cars and Detroit Diesel,

Freightliner Trucks, Western Star Trucks and Thomas Built Buses for trucks. Daimler mentions that it is focusses on 4 fields that will change the world of mobility which is greater vehicle connectivity, autonomous driving, digital mobility and transportation services and electric mobility. Their goal is to become one of the world leaders of mobility services. They also mention they are completely focused on the customer

3.3 Data analysis procedure

Based on extensive literature research on documents, records and reports of the targeted firms, statements can be made. Case studies ask for a different method of analysing the qualitative collected data. The method asks for constantly analysing the data and collecting the data instead of it being subsequent phases. Since there is a lot of information to process it is important to keep the variables consistent and limit the research to what needs to be explained. Therefore, this research limits itself to focus on the documents, records and reports because in these documents the necessary information to conduct an analysis is present. In this research the goal is to reduce the amount of available data into manageable data in which patterns and insights can be identified. This method is a content analysis, a content analysis can be qualitative and quantative. In this research as already mentioned a qualitative approach is used, documents and news articles are analysed to identify themes and theory. Regarding the qualitative research an inductive approach will be taken the data will be drawn from raw data through filtering out interesting concepts by examination and comparison of the data. A quantitative method uses a set of codes to reduce the data into more manageable data while the qualitative method enables a research to explore areas in which there is less knowledge available. The inductive content analysis is appropriate for themes which haven't been the subject of discussion yet. Therefore, key aspects need to be identified in the data to reduce the data to a couple of categories or themes. The data process of an inductive content analysis starts off with raw data in this case news articles and documents. It starts with open coding which is making notes of the text and new articles or summarizing the data. The requires multiple readings of the data in order to understand and summarize it into open coding. Following the open coding the data is grouped and compared to make similar categories and headings overarching the open coding making it bigger categories. This process allows the research to gain new insight and increase the knowledge of the data, by which it can eventually theorize or explore further certain aspects.

3.4 Limitations and ethics

The power of the research lays in the fact that it is a case study and therefore context specific and practical. However, this is also the limitations since this makes it harder for the research to be generalizable. Selecting a specific sample minimizes this limitation. Which is done in the sample selection paragraph in which the characteristics of the case selection are shown. The characteristics are chosen so that they cases are similar on a lot of aspects excluding the factor that is examined which is the structure of the CVC program.

4. Analyses

In this chapter the results of the analysis will be presented. In the previous chapter the theory behind the case study is established. The following chapter will provide empirical evidence. Considering the established theory, a within and cross-case analysis will be made. The analysis will provide an answer on the formulated research question.

4.1 Investment type

In chapter 2 multiple types of investment were identified, based on 2 dimensions. The ventures link to the organizational capabilities of the corporation and the corporate investment objective being financial or strategic. Regarding the cases these kinds of investment could be identified in order to explore which kind of objective the programs had and if they would focus more on tightly linked ventures than loosely linked ventures.

The following table represent how often the different cases used a certain type of investment. The individual cases and choices will be discussed followed by a comparison of the cases to dig deeper into the findings.

Objective	Strategic		Financial	
Type of Investment	Driving investment	Enabling Investment	Emergent Investment	Passive Investment
General Motors	2	6	3	0
BMW	2	7	6	0
Volkswagen	4	3	0	1
Daimler	1	5	2	0

Table 2. Type of investment frequency table

General motor made a strategy switch by focussing on investment when the new CEO Mary Barra was appointed. From the data the following statement was extracted: “Mary Barra, CEO of the most traditional of automakers, that most traditional of industries, announced last week that GM would go head to head with Google and Apple - itself locked in a war with Google -

in the development of self-driving cars and a variety of other urban-mobility initiatives." Showing their focus switch on innovation and especially on self-driving cars. To support this statement General Motors had the gm ventures CVC fund. Which made General Motors an active investing program with 11 investments in the period of 3 years. The most often used type of investment is the enabling investment which is an investment that it is focussed on strategic benefits with loose links to the organizational capabilities mostly focussed on complementaries. However, in the automotive industry al lot is invested in areas to not mis out on anything or become the first to introduce the technology. The industry is focussed on being the one to introduce the radical invention. Radical is defined in chapter 2 as incorporating fundamentally new knowledge and a significant improvement in performance (Wu et al., 2014). They are aiming to significantly improve their performance by being the first to incorporate the fundamentally knew knowledge. The enabling and emergent investment can be seen as investment aimed at producing a radical invention, since these are aimed at product inventions outside of the core product of the corporation. Emergent investment is in case of an environment shift and the enabling investment is focused on complementaries that might become important for the corporation. Therefore, it can be identified that 9 out of eleven of the investment of General Motors is aimed at achieving a radical invention to better the firm performance. In terms of the objective of the firm it can be said that the main objective is strategic given that 8 out of 11 is an investment focused on strategic benefits. Another interesting finding regarding GM ventures is the fact that all the emergent investment was made by the GM ventures CVC fund. This is an investment aimed at financial benefits and in case the business environments changes and the strategy of the company shifts than these investments could become strategically valuable.

BMW the other case with a CVC fund being BMW i ventures has also been active in the last 3 years in terms of investments. In total 15 investments made by BMW were identified. The BMW i ventures CVC fund is a younger program than that of general motors, it shows the shift in the automotive industry towards innovation. The following statement is retrieved from the data: "BMW Group is expanding the successful concept behind its venture capital unit and creating a venture capital fund of up to 500 million euros over ten years. This will allow BMW i Ventures to make investments in a wider range of areas, such as autonomous driving and digitalisation, and to secure continued access to the technologies of the future. BMW i Ventures, which was founded in New York in 2011 with an initial venture capital of 100 million dollars, is relocating its headquarters to Silicon Valley, the main hub for start-ups in the US. With a high level of autonomy, the venture capital unit will be able to

make swift investment decisions and win successful and promising start-ups worldwide as partners. “The statement clearly shows that the BMW group is happy with the performance of their CVC fund continuing financial backing and an extra investment of 500 million euros. The focus and objective of BMW can be identified as strategic since 9 out of 15 investment has the objective to gain strategic benefits. However as defined before the radical invention consists of the emergent investment and the enabling investment since these both are aimed at future development that could lead to new knowledge and eventually better performance either strategically of financial. These make up for 13 out of the 15 investment which clearly shows the race that is going on in the automotive industry to be the first to introduce new knowledge. The race is also identified in the data:” In the race to start the world's first driving business without human drivers, everyone is chasing Alphabet Inc.'s Waymo. BMW the maker of Ultimate Driving Machines doesn't see selling the ultimate riding machine soon. The company is testing completely self-driving cars developed with partner Intel Corp., which bought sensor maker Mobileye, and with German parts maker Continental. The self-driving BMWs aren't ready for the highways, BMW Chief Finance Officer Nicolas Peter said at a media event in Detroit. "This technology requires, from our perspective, some more time to have really fully automated cars on the road," he said.” In which it is stated that BMW is falling behind on the self-driving area which this research will dig deeper in later. It is however important to identify the fact that the incumbent firms are competing to be the first to introduce a radical invention regarding the automotive industry. In the case of BMW, the CVC fund made a broad range of investments which is also supported by the previous statement.

Volkswagen is the first case with a CVC unit, the first thing that is noticeable is that Volkswagen made 8 investments in total which is less than both the CVC funds. The nature and type of the investment shifted, with Volkswagen being the first to perform a passive investment and no emergent investment at all. It clearly shows the primary focus on strategic objectives with 7 of 8 investment being aimed at strategic benefits. With the driving investment being the most used investment, these investments will sustain the current strategy. It is unlikely however to help with disruptive strategies or new opportunities. The primary goal of driving investments is to strengthen current businesses. Therefore, the focus of Volkswagen is on strengthening the current position than being a leader in the future. Volkswagen has less focus on a radical invention since 3 out of 8 is aimed to produce the new technology with these 3 being enabling investments, which are also aimed at complementaries. This shows that Volkswagen might be afraid to take risks and wants to be

secure. The following statement is relevant regarding this observation: “Volkswagen will cut its spending by 1 billion euros ($1.07 billion) next year and "strictly prioritize" investments as it shores up its finances to deal with its emissions-rigging scandal, CEO Matthias Mueller said Friday after a board meeting.” This shows that the ability of Volkswagen is limited by issues it faces, this research will dig deeper in the effects of this issues later. It can however be identified that they are regaining their strength and looking to invest in the future: “German carmaker Volkswagen has announced that it will invest in electric and self-driving vehicles in China. Together with its partners in China, the world's largest market for cars, Volkswagen plans to invest EUR15 billion (USD18.3 billion dollars) by 2022, VW China boss Jochem Heizmann said on Tuesday ahead of the 2018 Beijing International Automotive Exhibition.” Aiming to invest 15 billion in the next 4 years probably to make up for last chances in the race of achieving the radical inventions coming in the automotive industry.

Daimler is the second case with a CVC unit. Daimler performed 7 investments in a time span of 3 years which is the lowest amount of all the cases. 6 out of 8 investments have a strategic objective underlining the fact that the overall CVC programs are aimed at strategic benefits. Daimler’s most used type of investment is the enabling investment this is more or less in line with the other cases in which enabling investment has been the most used type. Aimed at complementaries it is still close to the strategy and capabilities of the corporations but with slight differences and aimed at future developments it is still an investment that could result in a radical invention changing the industry and resulting in a much better performance. Despite performing less investment, the data mentions: “Every major automotive company has announced plans for a car with self-driving capabilities, but only five carmakers -- Daimler, Honda, Hyundai, Toyota and Volvo -- earn a positive take in Lux Research's analysis of OEMs' autonomous vehicle efforts. In an emerging scenario of few significant technical differentiations and near-ubiquitous systems capabilities, Lux Research evaluated 12 carmakers and offered a "positive" rating based on three key criteria: demonstrated capability, investment and partnerships. “At the end of the day, the company with the best business plan will win the race toward autonomy," said Kevin See, Lux Research Director and author of the report titled, "Determining Who's in the Fastlane for Autonomous Vehicles: A Comparison of Automotive OEM Plans for Driverless Cars." Which indicates that in terms of the race towards, a radical invention Daimler is doing a good job. This could be the result of the quality of the investment instead of the quantity. The statement is supported by the type of investments Daimler makes, since 7 out of 8 investments is aimed at radical inventions. This is a clear focus on wanting to discover the new technology.

In terms of comparing the cases and the different structures a couple observations can be made. The CVC fund tends to be more active and perform more investments. These investments are focused on a broader range. Which supports that the CVC funds are also aimed at financial objectives while the CVC unit has its focus on the current business and strategic objectives. Volkswagen makes an interesting case about how they coop with certain issues which reflects on the type of investment they perform. Volkswagen is also the only case that makes a passive investment primarily and solely aimed at financial gains. Furthermore, the most used investments are the enabling investment and the emergent investment both focused on a possible shift of environment or a shift in interest regarding the products. These investments depict an investment aimed at achieving a radical invention in which fundamentally new knowledge is found, which results in a significantly better performance. This clearly shows the current stressed mode the automotive industry is in. The incumbent firms are all aiming to be the corporation to introduce the newest and best version of the new products. Therefore, the corporations target certain investment areas that they want to perform in and become the leader. A couple of targets that the corporations have are identified, which shows the focus the cases have and can tell something about the motivation and performance.

4.2 Investment Target

The investment types have been discussed, the next subject of discussion is what they are investing in and what inventions or innovations do the cases want to achieve. These are the targets the corporations want to achieve by investing in certain ventures.

Investment Target	Self-Driving Cars	Electric Vehicles	Car-Sharing	Connectivity	Sustainability
General Motors	13	3	4	2	0
BMW	2	7	4	1	7
Volkswagen	4	2	1	1	3
Daimler	3	4	2	1	2

Table 3. investment targets data mentions

First an in-depth analysis will be performed on the individual cases. Followed by a cross-case analysis comparing the findings. General Motors has a clear focus on self-driving cars aimed to be the leader in this area with 13 data mentions out of the total of 22. This is shown by the following statement: “In the race to develop self-driving cars, General Motors is expanding its operations near Silicon Valley. The automaker said on Thursday that it planned to hire 1,100

people and invest $14 million at a new development center in San Francisco that would spearhead the company's work on self-driving cars'. and Cruise Automation, an autonomous-driving software company G.M. acquired a year ago, have been testing more than 50 Chevrolet Bolt electric cars equipped with self-driving technology on public roads in San Francisco; Scottsdale, Ariz.; and the Detroit area." This source also talks about a race towards developing a self-driving car. It also shows how big GM is invested in developing the self-driving car. Investing in a new research center is one of the ways it can enhance its performance on the self-driving car area. It also mentions an important acquire of GM of Cruise Automation which shows the focus of GM to be in the lead in the self-driving car area. Al these data are about investing options regarding the target area. Therefore, GM has been quite active with 22 data mentions. It is also interesting to see that on the area of sustainability, which are emission innovations or battery charge spaces, they have no data mentions. This means that GM is focused on producing a product rather than having a good image. What drives GM to focus on self-driving cars is the remaining question.

BMW has a clear focus on electric vehicles and sustainability which are tightly linked areas. With only 2 data mentions on self-driving cars it is interesting to see that there is a clear distinction on what the two CVC funds focus on. The fact that BMW aims at being the leader in the electric vehicle area is supported by the data: "In a move that underscores the importance of electric cars to the futures of automakers, BMW will convert its entire line-up to electric or plug-in hybrid power plants over the next 10 years, according to Green Car Reports. BMW has been the most aggressive among German automakers about embracing electric cars, having invested billions in Project i, a separate division dedicated to building alternative-fuel vehicles in eco-friendly factories to future-proof the marque in the face of tightening emission standards and dwindling natural resources." A data source from 2015 mentions the focus BMW has to make all their cars full electric. Besides making the cars full electric BMW plays a huge part in the sustainability area by providing a lot of areas with charging stations making sure that cars produce less emission. BMW makes charging stations and focusses on electric vehicles to show that they are all in on the zero-emission target: "The two automakers have been working together since late 2015 to build recharging stations in the U.S. In this latest push, the two worked with EVgo, the largest U.S. public network of "DC Fast" recharging stations, to add 174 new locations in 33 states. The stations give EVgo a total of 668 fast-charging stations right now -- with 50 more, supported by the BMW-Nissan partnership, set to be added during 2017." In this data source the BMW charging station quality and size are shown. It can be identified that BMW has a preference of being known as

the leader in the electric vehicles. The focus on electric vehicles pays off in terms of performance based on the following data: “The company's highly successful electrified vehicles are contributing strongly to the ongoing sales success and April saw the achievement of a significant milestone. "We are delighted to announce that there are now over a quarter of a million electrified BMW Group vehicles on the world's roads," said Pieter Nota, Member of the Board of Management of BMW AG responsible for Sales and Brand BMW. "Combined sales of BMW i, BMW iPerformance and MINI Electric vehicles were up 52% in April (9,831), bringing the total number of electrified BMW Group cars sold to over 250,000,". The observation that can be made is that having a focus on a specific area and putting a lot of effort can result in a better performance. 20 data mentions on different investment types are just a few less than General Motors but still a lot of news of BMW is about investing in innovation.

Volkswagen has 11 data mentions on investing in certain innovation areas, which is significantly less than the two CVC funds. This is in line with the findings of the investment types, it shows that the data confirms that the CVC units are less active than the CVC funds regarding investments. What is interesting to see regarding Volkswagen is that in the past 3 years it did not have a lot of focus on investing, however lately Volkswagen is trying to make a leap forward in a lot of areas. The broad range of areas that Volkswagen wants to focus on is also shown by the data mentions. This makes sense since Volkswagen is the biggest automaker of the world, which makes them have the resources to focus on multiple targets. The fact that they are trying to make a leap forward is shown in the most recent data: “After being rebuffed by BMW and Daimler AG's Mercedes Benz after seeking self-driving technology partnerships, Apple is now teaming with Volkswagen AG to modify VW vans into self-driving shuttles for Apple workers, the Times reported. That project is said to be behind schedule and is now the primary focus of Apple's autonomous-driving unit, the Times said. The tech giant began that unit four years ago, and last summer the Times reported Apple had scaled back plans to build its own self-driving cars to focus instead on building software and technology for autonomous driving.” This data source is from May 24th, 2018, in which Volkswagen makes a valuable relationship with Apple. The investment target is self-driving cars, but there are several other huge investments of Volkswagen in 2018 in different areas. Which support the observation that Volkswagen is trying to make up for lost time after some issues.

Daimler just like Volkswagen has a CVC unit, and has 12 data mentions regarding an investment target. This again is considerably less than the CVC funds that have 22 and 20

data mentions. Similar to Volkswagen the target areas are really divers and there is no clear focus detected in the data. Another interesting event occurred: The Chinese businessman who owns the Geely automotive group has acquired a $9 billion stake in Daimler, the German maker of Mercedes-Benz cars and trucks. The investment by Li Shufu, which Daimler confirmed Friday in a regulatory filing in Germany, represents 9.69 percent of the company. In a statement, Daimler said it was pleased to have Mr. Li as a "long-term-oriented shareholder" and described him as " an especially knowledgeable entrepreneur with a clear vision for the future, with whom one can constructively discuss the change in the industry." A majority part of stakes was acquired by a Chinese business man, which is an interesting event that will tighten the links with china. In a previously mentioned data source it was already stated that Daimler was one of the leaders in self-driving cars, this source however was from 2015. In a fast-paced industry, the positions of a corporation can change fast. Therefore, Daimler needs to keep investing. The 3 data mentions in the self-driving are a bit scarce and could lead to a worse position.

Comparing the cases, the observation that is most noticeable is that the CVC funds perform more activities regarding investing and innovation. The CVC funds also have a clear focus or preference that they wish to focus on while the CVC units perform less activities and on a broad range of areas. Specifically, BMW is focused on electric vehicles and General Motors is focused on self-driving cars, the focus has its effect on the performance as identified in the data. This says something about the motivation of the cases what they want to achieve and by which product or method they want to achieve it.

4.3 Reaction to Failure

Investing and trying to achieve innovation involves risk taking. Risks can result into better performances, since other incumbent firms are not willing to take risks. Risks can also result into failure. Failure can have a negative impact but also a positive impact depending how a corporation reacts to their failures. In the automotive industry the competition and the pressure to compete is immense. A lot of incumbent firms have the pressure to innovate and take risks to stay relevant. This results in a lot of mistakes and even scandals that are going to be discussed. What is the motivation of the corporations to perform the acts that fail and the motivation to move on. How do they react to failures and change their strategies for the better. Every failure is an opportunity to learn. The cases will be discussed separately, followed by a cross-case analysis. The motivation to act and the response in terms of strategy will be discussed involving failures and mistakes

General Motors had some issues regarding the technology of the cars:" Some cars are more hack-bait than others. The Wired hackers, Charlie Miller and Chris Valasek, targeted the 2014 Jeep Cherokee because they deemed it among the most hackable based on a survey of two dozen different models. Other vehicles they found particularly vulnerable included Toyota Motor's 2014 Infiniti Q50 and Prius, General Motors' 2015 Cadillac Escalade, the 2014 Ford Fusion, the 2014 BMW X3 and i12 and the 2014 Range Rover Evoque." One of the cars was more prone to hackers. Taking a look at the dimensions of failures in figure 4, it can be established that this issue resulted in a motivation to change. With negative feedback in an experienced area in which it has plenty of knowledge. These aspects lead to a motivation to change, this is a minor issue that does not heavily change their strategy regarding innovation. The aspiration level the cases have in the automotive industry is set at a high standard because of the huge competition. This makes it harder to achieve a performance that is at aspiration level and makes incumbent firms do all it can to get to the aspired level, even if it is illegal. GM had some issues regarding setting prices: "Shanghai's pricing regulator said it would fine GM's venture with China's largest automaker SAIC Motor Corp. Ltd. for setting minimum prices on certain Cadillac, Chevy and Buick models, according to China Central Television (CCTV). "GM fully respects local laws and regulations wherever we operate," the U.S. automaker said in an emailed statement. "We will provide full support to our joint venture in China to ensure that all responsive and appropriate actions are taken with respect to this matter. "As of the other issue this is not a major failure and will not result in strategic changes or differences in the performance of GM. It is an indicator of the fact that the automotive corporations are pushed to a certain limit to maintain or achieve a performance level.

BMW does not have a big history of scandals and failures. It is mentioned in the data that they made a big mistake in 1994:" BMW is another example of a car company that strayed from its traditional strength and then had to dispatch management talent and lots of cash to fix the problem - resources that could have been used to make BMW more competitive. I'm talking about BMW's disastrous purchase of England's Rover Group in 1994, which cost BMW about $3 billion and ended the careers of numerous executives." This investment resulted in a huge backlash of negative consequences. As it says it strayed away from its traditional strength in order to compete with other incumbents in the area of investments. As seen in figure 4 this resulted in a motivation to change, which they did by focusing more on investing which we already discussed. Again, the theory of Eggers and Soh (2014) is supported by this observation. BMW tried to achieve the aspired level of

performance by investing they were too low under the performance level and took a risk to big, which resulted in failure.

Volkswagen is the most interesting case regarding failures, they suffered a huge emission scandal in which they made their diesel emission cars seem to have less emission than they had. This resulted in a lot of repercussions: “Volkswagen’s resources have already been depleted because of the company's admission in 2015 that it programmed 11 million cars to fool regulators. Penalties and legal settlements in the United States totalled more than $22 billion, and cases in Europe are pending.”, “Volkswagen is taking another $3 billion charge to fix diesel engines in the United States, lifting the total bill for its emissions-test cheating scandal to around $30 billion.” This shows the amount of trouble Volkswagen is in with a total expense of 30 billion. The scandal is a result of Volkswagen’s failure to achieve the aspired level of performance and it tried to do achieve the performance level by cheating. Volkswagen took a huge illegal risk resulting in getting caught and being motivated or forced to change. The change they wanted to make is to focus on zero-emission and innovating: “Volkswagen’s name sake brand hopes to bounce back from its diesel emissions scandal with a broad restructuring that will mean more battery-powered cars, digital services such as ride-sharing, and more SUVs for the U.S. market.” This support the Eggers and Soh (2014) in which negative feedback in a known area leads to motivation to change. It shows that Volkswagen is restructuring to focus on technology and innovation. For Volkswagen the process of change was a process of struggle: “The decision by the publicly owned European Investment Bank at least temporarily deprives Volkswagen of low-cost financing it badly needs for research and development during a period of technological upheaval in the automobile business.”. Volkswagen had its research and development deprived and was not allowed to invest this made sure that Volkswagen had a huge backlash in which the other incumbent firms could get an advantage over Volkswagen. As already identified recently Volkswagen it trying to recuperate from the scandal and is making big moves in multiple areas to make a leap forward in the right direction.

Daimler did not suffer any failures that were noticeable in the data. Comparing the cases, the failures of the cases can be explained by the pressure to perform in this competitive industry. This is supported by Eggers and Kaul (2018), who mention that the performance of the cases is under the aspiration level, since they are all trying to achieve this radical innovation in different areas. They overinvest and take too much risk that result into failures as we have established. The cases aim at developing radical innovations which are the identified investment targets in these areas they have had strong performances in the past,

therefore this should enhance the ability of the cases to achieve the radical innovation (Eggers and Kaul,2018). These cases are also invested in multiple areas, which amplifies the risk the cases are willing to take, which explains the scandals and failures in the industry (Eggers and Kaul,2018). These failures can have a positive impact since it motivates the cases to change and therefore they could enhance their performance.

4.4 CVC fund vs. CVC unit

All previous discussed areas were examined to compare the structures of a CVC fund and a CVC unit. Other interesting findings are that the CVC fund can be seen as an addition in activities regarding innovation. The cases that had a fund performed the same base activities as the CVC units. These base activities can be identified from the investment types in which the CVC funds performed significantly more investment than the CVC units. It allows the CVC funds to put some effort into investments with a financial objective, which is uncommon for the CVC units. Most of the investments made by both structures where aimed at achieving a radical innovation, they were either an enabling investment or an emergent investment. In the industry it is common to make partnerships regarding innovation. An example is: "Automakers such as BMW, Ford, Groupe Renault and General Motors have come together to form a consortium that will explore how blockchain can reinvent mobility and address industry shifts." This data shows how two competing firms partner to explore a new technological area. These partnerships are necessary in the automotive industry, a lot of new technologies are explored, and knowledge sharing is needed to reach the radical innovations. Especially with firms that are specialized in area snot necessarily connected to the automotive industry: "Cubic Telecom, today announced that Volkswagen AG selected Cubic as the technology enabler on the all-new Volkswagen Touareg for its connected car experience. Touted as the most connected Volkswagen model ever, Cubic Telecoms embedded technology manages data delivery throughout Europe to enable Car-Net online services which are integrated with the Touaregs new infotainment system Innovision Cockpit. "This is a partnership between Volkswagen and a data delivery company, such partnerships are needed to acquire the necessary expertise knowledge. These partnerships and investment are all aimed at being the corporation that makes the radical innovation and bet he first to produce a full working car having the aspired technology. The CVC funds have the ability to focus on a certain area. They have this ability because of the extra investment they can make since they are dedicated purely to investments. In terms of what area they invest in BMW has a clear focus on electric vehicles and GM has a clear focus on driving-cars, while the CVC units

invest in all the areas. The funds also invest in a broad range of areas but have the time and capabilities to put more effort in a specific area. Which could give them the edge in these areas, as observed in the data that the focus resulted in better results. Regarding failures no specific difference has been observed about being more prone to failures. Volkswagen stands out regarding failures, since it has had a big scandal that limited them in terms of investing. It is observed that Volkswagen recently, made more investment and were able to focus on innovation again. This is a good example of the Eggers and Soh (2014) theory that mentions that in experienced areas getting negative feedback leads to new knowledge and motivation to change. As is identified by Volkswagen they are trying to change and go in an innovative direction. Eggers and Kaul (2018) identified that technological firms that chase radical innovations in their expertise, and in the area, they have had strong performances in are more capable of developing radical innovations in that area. Corporations in multiple technological areas or in this case investment targets have an even stronger affect, they are more willing to take risks when performing below the aspired performance level. Which shows from the fact that there are a lot of issues and failures in the automotive industry. These results change the motivation of the firms. It can motivate them to change resulting in the key to getting tot he aspired performance level. The cases and CVC funds and CVC units did not have huge differences in terms of different failures. The key aspect they were different on is the focus and the fact that the CVC funds had more investments. However, the increase in activities and increase in investments gives the CVC funds more opportunities to make mistakes or failures. This can lead to motivation to change and eventually in a better firm performance, because they structured their CVC activities as a fund instead of a CVC unit.

5. Conclusion and Discussion

This research is a case study that has the subject of corporate venture capital structures and innovation. There are multiple ways of structuring for corporate venture capital activities such as CVC funds and CVC units. The question remains what structure is most suitable in order to achieve innovation. Which leads to the research question of this study: “How do the CVC unit and CVC fund differ in terms of innovation performance?” This research complements the current research by focussing on structures and comparing cases. The findings and results of the research will be discussed in this chapter. Conclusions will be drawn and there will be a reflection on the process of the research. The discussion consists of the theoretical and practical implications of the research. Lastly, the possibilities of future research and the limitations of the research will be discussed.

5.1. Conclusion

An in depth and cross-case analyses has been done in this research. The collected data was reviewed by the discussed theory in chapter 2. These theories are the key to answering the research question. The case study had an inductive approach trying to explore new theories from the collected data, therefore propositions will be made for further research. Corporate venture capital is as an equity or equity-linked investment in young, privately held companies by a corporation or a corporate venture capital fund which is set as a subsidiary of the corporation (Henderson and Leleux, 2001). The corporate venture capital activities of a firm can be structured in different ways, including a CVC fund which is a subsidiary external to the parent company but supported financially and a CVC unit which is an internal business unit. These structures and programs are made to achieve innovation by investing in ventures.

Several aspects regarding the answering of the research question have been observed and examined. First, the investment types of the cases were examined. These types were retrieved from Chesbrough (2002). This gave a sufficient representation of different investments based on the objective being strategic or financial and the links to the operational capabilities of the corporation. It is also detected that the enabling investment and the emergent investment can be defined as being aimed at a radical innovation. The radical innovation is fundamentally new knowledge that increases the performances significantly. In terms of investment types, the findings that were done are that the cases that used a CVC fund performed more investment in total. The fact that they performed more investments results in a broader range of type of investments. Therefore, they also perform investment that have a financial objective while the CVC units are primarily focused on investments with a strategic objective. Being external to the parent company gives the CVC fund the opportunity to primary focus on investments, it gives them the time to spend effort on pursuing additional investments with a financial objective. Another finding is the fact that the most used investments were the enabling investment and the emergent investment. These investments are aimed at a possible shift in environment and a shift in product interest of the consumer, regarding complementaries. As mentioned it is observed that these investments can be categorized as aimed at radical innovation. The cases are trying to acquire fundamentally new knowledge, that results in a better performance. The fact that a lot of incumbent firms in the automotive industry are chasing these radical innovations in certain areas, results in a stressed and tense industry that willing to take a lot of risks.

In terms of the investment target area of the cases, it has been observed that the CVC funds as in the investment types had the most activities. The CVC funds had significantly more data about what area they are investing in. The CVC funds performed more activities in one specific area from which it can be said that there is a focus on a specific area. General motors aimed at the driving-cars area and BMW aimed at the electric vehicles area. From the data is retrieved that this focus resulted in a better performance of the case in that area. The CVC unit paid attention to all the areas but did not have an area in which it stood out.

The next topic that was researched is that of motivation resulting from failure. In previous topics it has been identified that the automotive industry is a competitive industry in which a lot of incumbent's firms are pursuing certain radical innovations. The competition adds to the risk the firms are willing to take. This also portrays the fact that the cases are not at the aspired level of performance. Therefore, as an addition to the risk they are already willing to take because of the competition. The cases are overinvesting because they are under the aspired level of performance and are also invested in multiple areas, which amplifies the risk the cases are willing to take (Eggers and Kaul,2018). These risks result into failures, these failures have been identified within every case that is researched. However, these failures can result in a better performance. It can be assumed that in these cases the necessary knowledge is available to process the negative feedback it gets from the failures or mistakes it makes. The cases are aimed at areas they have had strong performances in in the past, these factors determine that in case of a failure the corporation has a motivation to change (Eggers and Suh,2014). This motivation to change leads to a better performance than before.

Linking these researched aspects provides the answer to the research question: "How do the CVC unit and CVC fund differ in terms of innovation performance?" The focus and extra activities the CVC fund has regarding innovation and investing results in more risks and more failures than the CVC unit. It is discovered that in the circumstances of the cases these failures lead to a motivation to change and these changes lead to a better performance. The extra risks, activities, failures and motivation make sure the CVC funds have a better performance than the CVC units. Following this answer and observations propositions for the theory can be made:

- Under the right circumstances failures can lead to an increase of the innovation performance

- CVC funds perform more investment than CVC units which indirectly leads to a higher performance

-A focus on a specific investment target area leads to better performances in this area, these focuses are present in CVC funds

5.2. Discussion

The research question has been answered, the followed research topic is that of the practical and theoretical contribution of the findings in this study. The practical contribution is discussed in terms of managerial recommendations for the selected cases and for other corporations in general. The theoretical contribution consists of theoretical implications for the literature and possibilities for future research.

5.2.1. Managerial recommendations

In this research several cases have been researched. The main finding is the fact that the failures of the CVC fund eventually lead to a better performance. The core of this finding is the risk that these funds are willing to take, and the frequency of the innovation activities. The CVC fund has a focus on an investment area and performs more activities regarding innovation and investing. These activities eventually lead to a better performance. Therefore, the recommendation of this research is to set up a CVC fund. The CVC fund is not distracted by other business units and has all the time and effort to put in these investments which results in a better performance. Either the CVC program should be set up as a fund or the CVC unit should be restructured. The restructuring should focus on giving the unit all the resources it needs and given it unconditional financial support. Learning and therefore innovation is about making mistakes and getting feedback so that you can learn from these mistakes. The managers of the units should use figure 4 in order to identify in which area they should operate. They can also see if certain actions can lead to extra motivation to change. In this process extra attention should be paid to the knowledge sharing protocols in the corporation. Knowledge sharing is key in iteratively pursuing the radical innovation. Extra attention needs to be directed towards the issue of the stressed industry. The industry is in a race towards the radical innovation, the corporations need to be aware and realize that they cannot make mistakes as big as the Volkswagen case. Failure can have a positive result but if the impact is as big as with the case of Volkswagen it will have a huge negative impact. This can also have a permanently negative impact on the image. This study gives managers extra insights in the structures of a CVC program, it eases the decision of how to structure the CVC program. It also put forwards a couple of insights that managers can consider when performing an investment or pursuing an innovation.

5.2.2. Theoretical implications

The theoretical implications can be made based on the answer of the research question and the performed data analysis. The research answer and the retrieved data are reviewed based on the theory in chapter 1. First, the data already confirmed that a CVC program is a suitable strategy for acquiring knowledge and that these CVC activities are beneficial for the innovation performance of the firm (Van de Vrande, 2013; Dushnitsky and lenox, 2006; Bierwerth et al., 2015). These statements have been supported by this research and have been complemented with a discussion based on the structures of the program and how this affect the knowledge acquiring and innovation performance. The discussion has been started but more research is needed on the effect of specific CVC structures on the innovation performance. More variables need to be considered regarding this discussion, such as different industries and more in- depth analysis of the knowledge sharing behind these investments. It is confirmed that the CVC unit and CVC fund perform similar activities with the same objectives as mentioned by Dushnitsky and Shaver (2009). There are differences however in the linkages with the parent company and this changes the incentive structure but also the way the programs are working (Gompers and Lerner,2004). The differences in linkages gives the CVC fund more freedom to perform the activities they want this is an addition to the recent theory. That already stated that the CVC unit could be intervened by other business units (Gompers and Lerner,2004). This is supported by this research since they perform less activities and have less focus on certain target areas. The theory of Athey and Stern (1998) is contradicted in this study regarding differences between these programs. The CVC unit is closer to the business activities and therefore it should identify and incorporate complementaries better. The CVC fund however only shares the knowledge on points that it is necessary and can achieve the same knowledge of the business activities as the CVC fund. Therefore, in these cases this theory is contradicted. Furthermore, the fact that the CVC unit has more in-depth knowledge of the business and can therefore select the ventures better or add value in a more efficient way when the investment has been made is also not supported by this research (Athey and Stern, 1998; Gompers and Lerner, 2004).

5.2.3. Future research

This study has a specific scope and design, that results in limitations. These limitations are the boundaries of the study. This determines the scope of the study but also the quality of the study. Not every variable can be considered in one research. Therefore, the variable or aspects that fall outside the scope of the study can be the subject of future research. This research has

brought to light new research topics and new questions.

The scope and design of this study result in a couple recommendations regarding the limitations of the study. Future research could use different data collection methods, such as mixed methods to get more generalizable results. In this research a content analysis based on documents has been done. This has been done to maintain an objective perspective on the data. Interviews could give the study a perspective from the view of the cases it self which could be useful to gain internal insights and experiences of the cases, this could give a more subjective perspective. To improve the validity and generalizability future methods could also include quantitative research. The quantative research can incorporate large samples or a survey-based study.

In this case the sample was of 4 cases. These is a rather small number in order to be generalizable. These cases were all active in the automotive industry. Therefore, the research can have different results in other industries. The fact that only 4 cases were tested, and the focus was on the automotive industry has it effects on the generalizability of the study. This can be addressed in further research by doing quantitative research on multiple industries. Also, geographical differences could have influenced the results since 3 out of the 4 cases are German and 1 is American. The influences of the geographical location on the relations regarding this study can be an interesting subject of future research.

This study has focused on the structure of the CVC unit and the CVC fund to get a broader view of the options regarding innovation future research could focus on more ways to achieve innovation. In chapter 2 multiple methods of innovations are discussed but this research concentrated on the CVC unit and CVC fund, the effects of the structure can also be tested taking incubators, accelerators and the R&D centers into account.

The findings of this research support that knowledge sharing, and motivation are key to achieving innovation. Therefore, future research can pay more attention on the ways motivation affects the performance regarding innovation. Innovation and new processes always brings up discussion. Future research should also aim at identifying the optimal knowledge sharing processes in the specific structures of a CVC fund and a CVC unit since these are different structures with different linkages.

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Appendix 1 General Motor analysis

Source	Data	Initial coding	Second Order Concepts
The New York Times April 3, 2015	Can Cadillac recapture the swagger? General Motors, Cadillac's parent, is making a big bet that it can. G.M. is reconstituting Cadillac as a stand-alone division, with its own marketing, product development and management teams. Cadillac is moving its headquarters to Manhattan's urban-chic SoHo neighborhood from Detroit.	GM reconstituting cadillac as a stand alone division	Organziational Changes
China Daily April 21, 2015	Shanghai GM, a joint venture between SAIC Motor and General Motors, said on Monday that it will **invest** 100 billion yuan ($16 billion) between 2016 and 2020	Shanghai GM announces plans to invest 16b	Future Investments
The Guelph Mercury (Ontario, Canada) April 29, 2015	University of Waterloo engineering student Ben Gaffney is the first of more than 100 new hires General Motors Canada says it will make over the next couple of years at its research and development facility in Oshawa.	Expanding R&D	Research and Development
States News Service May 14, 2015	U.S. Senator Gary Peters (MI) today released the following statement on the announcement by General Motors to invest $1 billion in its National Historic Landmark Warren Technical Center campus: "Today's announcement by General Motors is a promising step to ensure that we are developing, designing and manufacturing the vehicles of the future right here in Michigan. This important investment will help bring 2,600 new middle class jobs to southeast Michigan and support development and growth at the Warren Technical Campus.	GM invest 1b in Technical center campus	Research and Development
Spokesman Review (Spokane, WA) June 21, 2015	**General Motors** has come a long way from its recent bankruptcy, and it looks like it has more improvement ahead. A sweeping overhaul of GM's expensive, slow and inefficient product-development process a few years back has resulted in GM saving $1 billion per year, with its product quality now rivaling that of Toyota Motor. Meanwhile, it's **investing** more in regions such as China, where it and its Chinese partners plan to spend $14 billion between 2014 and 2018, opening five new factories and introducing 60 new or refreshed models. The company is spending $12 billion developing its Cadillac brand, and hopes to almost double its sales between 2014 and 2020.	GM revival and plans for the future	Future Investments

USA TODAY July 24, 2015	Some cars are more hack-bait than others. The Wired hackers, Charlie Miller and Chris Valasek, targeted the 2014 Jeep Cherokee because they deemed it among the most hackable based on a survey of two dozen different models. Other vehicles they found particularly vulnerable included Toyota Motor's 2014 Infiniti Q50 and Prius, **General Motors'** 2015 Cadillac Escalade, the 2014 Ford Fusion, the 2014 BMW X3 and i12 and the 2014 Range Rover Evoque.	GM car Vulnerable to hacking	Issues
Progressive Media - Company News July 30, 2015	Chevrolet, an arm of US automotive giant **General Motors** (GM), will pump in $5bn to boost its operations across the world, of which the carmaker's Indian and Brazilian business units will entail **investments** worth $1bn and $3.8bn, respectively. With this, the company aims to create an all-new vehicle breed for replacing several existing vehicles to improve competitiveness and profitability. The **investments** in Brazil will be made between 2014 and 2019.	Invest in brazilian and indian business units	Organizational Changes
Mail Today July 30, 2015	US automobile giant announces turnaround plan, decides to cease production in Gujarat & focus on Maharashtra GENERAL Motors (GM) pulled the turnaround gear in India on Wednesday announcing a fresh **investment** of $ 1 billion (Rs.6,400 crore) which will see the US auto giant winding up its Gujarat operations and consolidate manufacturing in Maharashtra. " GM cannot remain a global leader without making a serious **investment** towards expanding our presence in growth markets like India," GM chief executive officer (CEO) Mary Barra said at a press conference	GM announced further investment in India	Organizational Changes
The Express Tribune August 16, 2015	Several prominent hedge fund managers made bigger bets on US automaker **General Motors** during the second quarter, despite the company battling a deadly ignition defect and tangling with shareholders over its stock price	Funds Invest in GM	Receive Investment
The Deal Pipeline September 1,2015	Sergio Marchionne's very public courtship of General Motors Co. (GM) has not gained much traction to date. But the Italian executive has positioned himself to benefit even if his Fiat Chrysler Automobiles NV (FCAU) is unable to secure a deal with a rival automaker.	Fiat wants a merger with GM	Receive investment

PR Newswire October 1, 2015	Running an errand to a big box store or planning a weekend excursion are about to get easier for some Manhattan residents because of a car-sharing program revealed today by General Motors. It's the company's latest move to deliverurban mobilityoptions to customers around the globe. Residents use a GM-developed mobile app to reserve a vehicle and access parking in one of 200 garages throughout Manhattan managed by Icon Parking Systems. The fleet currently includes eight Chevrolet Trax small SUVs and two Chevrolet Equinox compact SUVs, with more vehicles to be added later.	Gm Announced car sharing program	Car-Sharing
Dayton Daily News (Ohio) October 12, 2015	Quite out of character, General Motors announced that it is ready and willing to rise to that challenge. Mary Barra, CEO of the most traditional of automakers, that most traditional of industries, announced last week that GM would go head to head with Google and Apple - itself locked in a war with Google - in the development of self-driving cars and a variety of other urban-mobility initiatives.	Gm Announced competing in the development of self driving cars	Self-Driving Cars
The Associated Press January 4, 2016	**General Motors** Co. said Monday it is **investing** $500 million in ride-hailing company Lyft Inc. and forming an unprecedented partnership that could eventually lead to on-demand, self-driving cars. It's the largest **investment** yet by a traditional automaker in a new mobility company, and is an acknowledgement by GM that the transportation landscape is changing fast.	GM invested 500 million in Lyft.	Self-Driving Cars Enabling Investment
The New York Times January 6, 2016	Several car companies have focused on electric vehicles at the International CES consumer trade show here, including General Motors, which on Wednesday introduced the production version of its Chevrolet Bolt. G.M.'s chief executive, Mary T. Barra, said the Bolt was a big step forward in the electrification of vehicles because of its price and ability to travel 200 miles on a fully charged battery. "This is truly the first EV that cracks the code because of long range at an affordable price," Ms. Barra said in a keynote speech at the show.	Introduced the production version of its electric vehicle	Electric Vehicles
PR Newswire January 6, 2016	Mobileye N.V. the global leader in the development of vision and data analysis for Advanced Driver Assistance Systems and autonomous driving, will announce today at the CES conference a new mapping technology development called Road Experience Management (REM), which enables crowd-sourced real-time data for precise localization and high-definition lane data that forms an important layer of information to support fully autonomous driving. Mobileye is engaged with **General Motors** to integrate REM into existing program launches in an expedited timeframe, as part of GM's heightened partnership with Mobileye.	Gm partnership with Mobileye producing mapping technology for autonomous driving	Self-Driving Cars Partnership

The Deal Pipeline March 14, 2016	**General Motors** Co. (GM) has a deal in place to acquire autonomous vehicle technology startup Cruise Automation Inc., continuing the automaker's heavy push into next-generation technologies. San Francisco-based Cruise began as a maker of a hardware and software package that would allow customers to retrofit existing vehicles for self-driving, and has more recently been focused on developing tools for future autonomous vehicles. GM acquired Cruise Automation, a startup that makes autonomous vehicle software, for $581 million.	Gm Acquired Cruise an autonomous vehicle software company	Self-Driving Cars Enabling investment
The New York Times July 22, 2016 Friday	We know we need a national testing and validation site," Senator Peters said at an automotive digital security conference here. "We need one in place where all the auto companies can come together." The senator said such a facility was needed to help keep the United States competitive in the race to develop the self-driving cars of the future. China, Japan, Germany and Sweden are also rushing to set up testing centers. The early trials of autonomous technology typically have taken place in closed proving grounds that automakers have used for decades. But more and more, testing is being done on public roads.	Testing site for self-driving cars needed	Self-Driving Cars
Investor's Business Daily August 12, 2016	Ride-hailing app Lyft reportedly snubbed a takeover bid from **General Motors** (GM), according to a report citing anonymous sources, instead opting to kick off a new fundraising round, even as it struggles in its battle against U.S. rival Uber Technologies.	Lyft rejects GM's takeover bid	Rejected Investment
States News Service August 13, 2016	General Motors has taken a big, green step in the world of manufacturing, installing an 850 kW solar array at its Bowling Green Assembly plant in Kentucky. The development of this solar system by a company like GM not only sets the precedent for investing in renewable energy, but also that American manufacturing can rely on solar to power its facilities in a sustainable and affordable way.	Solar panel to power gm's manufacturing facilities	Sustainability
The Daily Cardinal November 2, 2016	**General Motors** announced on Nov. 1 that its Maven car-sharing unit has struck a deal with ride-hailing giant Uber Technologies to provide discounted short-term leases on GM vehicles to Uber drivers.GM owns about 9% of Lyft, Uber's principal ride-hailing rival in the United States. GM **invested** $500 million in Lyft in January, GM's president sits on Lyft's board, and GM and Lyft are working on a series of programs together.In fact, this new program with Uber is very similar to one that GM set up for Lyft's drivers earlier this year. But GM doesn't see any reason for Maven not to lease cars to drivers working for Lyft's rival. And apparently Lyft doesn't mind.	Partnered with uber for renting out cars	Car-Sharing Partnership

Shenzhen Daily December 26, 2016	Shanghai's pricing regulator said it would fine GM's venture with China's largest automaker SAIC Motor Corp. Ltd. for setting minimum prices on certain Cadillac, Chevy and Buick models, according to China Central Television (CCTV). "GM fully respects local laws and regulations wherever we operate," the U.S. automaker said in an emailed statement. "We will provide full support to our joint venture in China to ensure that all responsive and appropriate actions are taken with respect to this matter."	A GM venture gets Fined for setting minimum prices	Issues
peHUB January 3, 2017	Proterra, a maker of zero-emission vehicles that enable bus fleet operators to eliminate the dependency on fossil fuels, has raised $140 million in funding. The investors included Tao Capital Partners, Kleiner Perkins, **GM Ventures,** Constellation Technology Ventures, 88 Green Ventures and Edison Energy Inc.	Gm ventures funds a eco friendly bus company	Electric Vehicles Driving investment
The Daily Cardinal January 23, 2017	Earlier this month,**General Motors'** Cadillac brand rolled out a new service aimed at affluent urban customers who might not want to own a car. It's inspired by car-sharing, and -- like ride-hailing and car-sharing services -- the idea behind it could turn out to be quite disruptive. BOOK is essentially a subscription service with an intriguing twist. For a flat monthly fee, members get access to any of several top-of-the-line Cadillacs, delivered right to their homes. Insurance and other costs are included, there's no mileage limit, and -- here's the twist -- BOOK members can swap the Cadillac they have for another model any time they want, up to 18 times a year. There's no long-term commitment: Membership is month-to-month. Details (including those car swaps) are handled via a cellphone app.	Luxury Car sharing service BOOK cadillac	Car-Sharing
The Daily Cardinal January 31, 2017	**General Motors** and Honda announced on Monday that they will mass produce fuel cell systems for vehicles at a plant in Michigan, starting around 2020. The companies have been working together on advanced fuel cell systems for vehicles since 2013. Monday's announcement formalizes their longtime goal of beginning mass production of fuel cell systems by the end of the decade.	JV to mass produce fuell cell systems	Sustainability
Manufacturing Close-Up February 23, 2017	NanoSteel reported the closing of a new round of equity investment led by **GM Ventures.** According to a release, the financing included new investors Lear Corp., an automotive seating systems and electrical systems supplier, and SPDG, a single family office based in Brussels, in addition to the company's existing major shareholders. The company said that proceeds from the investment round will be used for the commercialization of NanoSteel's advanced high strength sheet steel (AHSS) for automotive lightweighting applications	Led investment round in high strength sheet steel	Emergent Investment
The Daily Cardinal March 5, 2017	**General Motors'** car-sharing subsidiary, Maven, is launching a new deluxe car-share service that allows members to get full use of a Chevrolet vehicle for up to 28 days, complete with insurance, $100 worth of gas, and -- something that could be very valuable in certain cities -- a parking space.	Subsidiary launches car-sharing service	Car-Sharing

The Deal Pipeline March 7, 2017	An **investor** group including BNP Paribas SA and Peugeot SA has agreed to acquire GM Financial's European operations from **General Motors** Financial Co. for $0.96 billion ((EURO)0.9 billion)	Sold GM financial european operations	Mergers&Acquisistions
The New York Times April 13, 2017	In the race to develop self-driving cars, **General Motors** is expanding its operations near Silicon Valley. The automaker said on Thursday that it planned to hire 1,100 people and **invest** $14 million at a new development center in San Francisco that would spearhead the company's work on self-driving cars. G.M. and Cruise Automation, an autonomous-driving software company G.M. acquired a year ago, have been testing more than 50 Chevrolet Bolt electric cars equipped with self-driving technology on public roads in San Francisco; Scottsdale, Ariz.; and the Detroit area.	Expanding self driven car operations	Organizational Changes Self-Driving Cars
PR Newswire Europe May 16, 2017	From devising driver monitoring systems to mapping services and driver safety data on the go, start-ups are rapidly emerging in every technological vertical in the automotive space. Over 1,700 start-ups are focusing on developing technologies that enable electrification, autonomous cars, and mobility solutions to reduce the cost of ownership and enhance user experience. Meanwhile, original equipment manufacturer (OEM) start-up initiatives such as BMW Start-up Garage, the JLR Incubator Program, Ford Mobility, and **GM Ventures,** are fuelling start-up investment and the race to bring autonomous electric mobility to market.	Race to produce first autonomous car	Self-Driving Cars
The Detroit News July 19, 2017	GM confirmed Wednesday it has invested in Nauto in its recent fund-raising round and previously, but spokesman Alan Adler declined to provide details on how much funding it has provided. Nauto is one of dozens of companies that GM Ventures, the automaker's venture-capital arm, has invested in.	GM Invested in Nauto AI for self driving cars	Self-Driving Cars Enabling investment
PR Newswire August 1, 2017	**General Motors** Co. and Groupe PSA today announced the close of the sale of GM's Opel/Vauxhall business to the Groupe PSA. The sale represents a win for all stakeholders and is the latest and most significant in a series of actions GM has taken to strengthen its global enterprise and position itself for the future, while immediately improving the company's financial performance.	Sale of GM's opel/vauxhall business	Mergers&Acquistions
Business monitor international September 1, 2017	Verizon and General Motors (GM) have announced a global connected car deal. Through Globetouch, Verizon Telematics will provide an upgraded network solution that will be used by GM with its OnStar platform.	Verizon/Gm deal one overall network provider	Vehicle Connectivity Partnership

The New York Times October 2, 2017	On Monday, General Motors, America's largest automaker, staked its claim to leadership. Outlining a fundamental shift in its vision of the industry, it announced plans for 20 new all-electric models by 2023, including two within the next 18 months.	GM expanding electrical models	Electric Vehicles
IHS Global Insight October 10, 2017	**General Motors** (GM) has acquired LiDAR technology company Strobe Inc, according to an announcement by the automaker. The Strobe engineering team will join GM's Cruise Automation division "to define and develop next-generation LiDAR solutions for self-driving vehicles", according to a company statement. In a blog post, the head of Cruise Automation, Kyle Vogt, wrote that LiDAR (Light Detection and Ranging) sensors that use laser light to measure the distance to objects is currently one of the technology issues limiting the deployment of self-driving cars.	Acquired liDAr technology usefull for self driving cars	Self-Driving Cars Enabling Investment
PR Newswire October 18, 2017	"Ushr's HD mapping plays a critical role in assuring that Super Cruise operates as promised," said Jon Lauckner, Chief Technology Officer, General Motors. "We knew at a very early stage that high-definition mapping was critical for Super Cruise and there were few companies who could provide reliable data and that's why **GM Ventures** invested in Ushr.	Invested in Ushr mapping technology	Self-Driving Cars Enabling investment
The New York Times November 29, 2017	For more than a year, General Motors has tantalized investors with plans to build its future around self-driving cars. It has regularly announced big investments and progress reports, but the company has kept its prototype vehicles largely under wraps — until now. On Thursday, G.M. will demonstrate its growing fleet of computer-operated, battery-powered Chevrolet Bolts in San Francisco to dozens of investment analysts, who are eager to evaluate the automaker's advanced test vehicles.	GM unveils its driverless cars	Self-Driving Cars
Private Equity Wire January 17, 2018	Seurat Technologies has closed a USD13.5 million Series A round of funding led by True Ventures. Additional investors include GM Ventures, Porsche SE, next47 on behalf of Siemens Power and Gas, and Maniv Mobility. The funds will be used to accelerate the commercialisation of Seurat's breakthrough metal additive manufacturing technology. Seurat previously raised USD3.41 million in a seed financing led by True Ventures in June 2016.	Gm ventures funds Metal additive manufacturing technology	Emergent Investment
Venturebeat February 7, 2018	"Investing in Yoshi's fuel delivery service allows us to pilot an innovative, premium experience for our customers while integrating with the latest connected vehicle technology already onboard Chevrolet, Buick, GMC, and Cadillac vehicles," said GM CTO Jon Lauckner.	Invested in Yoshi a car maintenance platform	Vehicle Connectivity Enabling Investment
FinancialWire March 15, 2018	"We're continuing to make great progress on our plans to commercialize in 2019," said **GM** President Dan Ammann. "Our Orion and Brownstown teams have proven experience in building high-quality self-driving test vehicles and battery packs, so they are well-prepared to produce the Cruise AV."	Progress self driving vehicles	Self-Driving Cars

	GM will **invest** more than $ 100 million to upgrade both facilities. Roof module production has already begun and production of the fourth generation Cruise AV is expected to begin in 2019.		
Financial Services Monitor Worldwide May 2,2018	Algolux Inc., the leading provider of machine-learning stacks for autonomous vision and imaging, is pleased to announce the closing of a USD $10M Series A funding round led by General Motors (**GM) Ventures.** The syndicate includes Drive Capital, Intact Ventures, and a follow-on investment from Real Ventures. The new capital will be used to advance the companys ground-breaking technology and grow its global business development activities.	GMventures funds a autonomous vision company	Self-Driving Cars Emergent Investment
Alphr May 3, 2018	Automakers such as BMW, Ford, Groupe Renault and General Motors have come together to form a consortium that will explore how blockchain can reinvent mobility and address industry shifts.	Exploring blockchain consortium	Blockchain Partnership
CE Noticias Financieras English May 4, 2018	**General Motors** announced that it is developing a new and advanced design software technology to make the vehicles of the future lighter and more efficient, key to the development of units with alternative propulsion and zero emissions.	GM develops technology to make vehicles of the future lighter	Research and Development
Business line May 10, 2018	The Detroit car maker and state-run Korea Development Bank (KDB) already have a preliminary deal on $7.15 billion of investments, including $2 billion of capital spending by GM and a $2.8 billion debt-for-equity swap for existing loans GM Korea owes to its parent, to rescue the unit. As a sign of its long-term commitment, GM plans to set up a new Asia-Pacific headquarters in South Korea	Saving a unit in debt, investing 7 billion	Organisational Changes Driving investment

Appendix 2 BMW Data Analysis

Source	Data	Initial Coding	Second order concepts
PR Newswire June 26, 2015	In a move that underscores the importance of electric cars to the futures of automakers, BMW will convert its entire lineup to electric or plug-in hybrid power plants over the next 10 years, according to Green Car Reports. BMW has been the most aggressive among German automakers about embracing electric cars, having invested billions in Project i, a separate division dedicated to building alternative-fuel vehicles in eco-friendly factories to future-proof the marque in the face of tightening emission standards and dwindling natural resources.	BMW underscores the importance of electric by committing to going full electric in 10 years	Electric Vehicles
The New York Times August 4, 2015	Nokia, the Finnish telecommunications company, said on Monday that it had sold its Here digital mapping unit to a consortium of German automakers for 2.8 billion euros, or about $3 billion. Under the terms of the deal, a consortium of German automakers, including Audi, **BMW Group** and Daimler, will acquire Here. Digital mapping is part of an array of digital technologies on which carmakers are making big **investments.**	Consutrium of Daimler audi and BMW buys digital mapping unit from Nokia	Driving Investment
PR Newswire August 30, 2015	Greenlots, a global provider of open standards-based technology solutions for electric vehicle (EV) networks, partners with CapitaLand, one of Asia's largest real estate developers, and **BMW Group** Asia to provide Singapore's growing population of electric vehicle (EV) and Plug-in Hybrid (PHEV) owners with additional charging stations in the Central Business District (CBD) and beyond.	BMW provides charging stations in singapore	Sustainability
India Automobile News September 2, 2015	"**BMW i Ventures** provides equity financing to service providers it identifies as having high potential to make urban mobility smarter, more efficient and more flexible," said Ulrich Quay, Managing Director of **BMW i Ventures.** "With its combination of service and technology that makes it easier for drivers to park and take care of their cars, ZIRX has the potential to be a central component of on-demand services."	Investing in ZIRX a on demand car service	Car-Sharing Emergent investment
GlobeNewswire December 7, 2015	Backed by its new shareholders -- a consortium consisting of AUDI AG, BMW Group and Daimler AG -- HERE plans to accelerate the deployment of real-time maps to benefit people and businesses around the world. "The map is evolving into a live representation of the world, giving us a second-by-second view of our cities and road networks," said Sean Fernback, the President of HERE. "Now we have the backing of three automotive companies which share our view that this map will be life-changing for people: it will power location services that improve mobility for people and enterprises,	Group of BMW Daimler and Audi baked HERE a map developer	Mapping Partnership

	make driving safer and more enjoyable, and reduce emissions." Serving all industrieswith an open location platform		
Automotive News January 25, 2016	**BMW** is another example of a car company that strayed from its traditional strength and then had to dispatch management talent and lots of cash to fix the problem - resources that could have been used to make **BMW**more competitive. I'm talking about **BMW's** disastrous purchase of England's Rover Group in 1994, which cost **BMW** about $3 billion and ended the careers of numerous executives.	Risk of switching the strategy to investing	Issues
PR Newswire April 8, 2016	"The convergence of transportation trends in cities is of key importance to BMW. RideCell's technology platform provides agile tools to power services that span the entire mobility spectrum, including but not limited to car sharing; making them an ideal partner for BMW,"said Ulrich Quay, Head of **BMW i Ventures.**	BMW invest in RideCell technology platform provider	Electric vehicles Enabling Investment
PR Newswire May 25, 2016	Scoop Technologies, Inc., creators of the groundbreaking carpooling mobile application "Scoop," announced today that the company has raised a $5.1M funding round led by Signia Venture Partners with participation by Index Ventures, BMW i Ventures and Workday Ventures.	BMW I Ventures funds Scoop a carpooling app	Car-Sharing Emergent Investment
The Daily Cardinal: University of Wisconsin - Madison July 9, 2016	As if the driverless car market couldn't get any more crowded,Intel (NASDAQ: INTC),Mobileye (NYSE: MBLY), andBMW (NASDAQOTH: BAMXF) announced last week that the companies are working together to bring a fully autonomous car platform to market by 2021. The companies are specifically targeting the fleet market, likely because most of the initial growth in driverless cars is expected to come from this automotive segment (along with farming and mining vehicles), according to McKinsey&Company. The three plan to have a working platform prototype in **BMW's** iNext model soon and release a test product for automakers sometime next year.	BMW partners with mobileye and intel for autonomous driving	Self-Driving Cars Partnership
Business Wire September 13, 2016	Following early successes with customers such as **BMW Group** and Delphi, Carbon (Carbon 3D Inc.) today announced new funding from strategic **investors** toward the goal of bringing additive technology to more customers transitioning from prototyping-only use cases, to applications requiring final production quality parts with great surface finish,	Carbon a BMW backed firm gets more funding	Emergent investment

	broad and expanding material options and the plans to transition to mainstream manufacturing.		
PR Newswire September 15, 2016	Electric vehicle (EV) drivers can now travel the most heavily-trafficked corridors on the East and West Coasts of the United States with the installation of 95 new DC Fast charging stations as part of the Express Charging Corridors Initiative - a collaboration of two of the world's top automakers, **BMW** of North America and Volkswagen of America, Inc. and ChargePoint, the world's largest EV charging network. The recently completed express charging corridors are designed to meet the increasing demand for convenient, publicly-available EV fast chargers and act as a catalyst for the growing adoption of electric vehicles in the United States.	BMW partnered with Volkswagen to produce charging stations	Sustainability
Automotive News September 18, 2016	Now, **BMW's** management board is holding talks aimed at breaking a deadlock over whether to produce new electric cars, including a battery-powered Mini, sources told Reuters. Indeed, **BMW's** top executives will skip next week's Paris auto show to kick it around. Top management is said to be divided, what with expensive early investments that resulted in only lackluster sales of the i3 electric car	Discussion within BMW to invest in electric cars	Electric Vehicles Future investments
India Automobile News November 28, 2016	The BMW Group is expanding the successful concept behind its venture capital unit and creating a venture capital fund of up to 500 million euros over ten years. This will allow **BMW i Ventures** to make investments in a wider range of areas, such as autonomous driving and digitalisation, and to secure continued access to the technologies of the future. **BMW i Ventures,** which was founded in New York in 2011 with an initial venture capital of 100 million dollars, is relocating its headquarters to Silicon Valley, the main hub for start-ups in the US. With a high level of autonomy, the venture capital unit will be able to make swift investment decisions and win successful and promising start-ups worldwide as partners.	BMW group expanded venture capital fund of up to 500 million over ten years	Future investments
Investor's Business Daily December 29, 2016	Mobileye (MBLY) will partner with digital mapping company Here, owned by a consortium of German automakers, to develop a precise global map that can be used for hands-free driving and location services, posing a threat to Google Maps owner Alphabet (GOOGL). The three owners of Here are BMW (BMWYY), Mercedes-Benz and Audi,	Mobileye partners with group consisting BMW to develop a global map	Connectivity partnership

	which together acquired the mapping business from Nokia (NOK) in August 2015 for $3 billion. Volkswagen (VLKAY) is the parent company of Audi.		
The Daily Cardinal: University of Wisconsin - Madison January 25, 2017	The two automakers have been working together since late 2015 to build recharging stations in the U.S. In this latest push, the two worked with EVgo, the largest U.S. public network of "DC Fast" recharging stations, to add 174 new locations in 33 states. The stations give EVgo a total of 668 fast-charging stations right now -- with 50 more, supported by the **BMW**-Nissan partnership, set to be added during 2017.	BMW working with Nissan to build recharging stations	Sustainability Partnership
New York Observer March 2, 2017	Only operational for the last several weeks, Urban-X is a shared venture between carmaker Mini (a BMW brand) and venture capital firm, SOSV which exclusively invests in companies that come through its eight accelerators all over the world. Accelerators are shared work spaces with shared resources (such as mentorship, equipment and contacts) that facilitate startups getting to market (or failing) more quickly.	Urban-x accelerator of mini(bmw) and venture capital firm	Accelerator
The Daily Cardinal: University of Wisconsin - Madison March 8, 2017	Not only did BMW create a hatchback with an impressive electric range, it did so without compromising on performance. BMW used carbon fiber-reinforced plastic in the framework of this hatchback to make its body lighter, contributing to this model's agile driving performance and excellent range.	BMW impressive electric range	Electric Vehicles
Automotive News Print Version April 3, 2017	**BMW's** iNext, which is expected by 2021, will offer Level 4 automation that requires little to no human intervention, says **BMW's** global sales and marketing chief, Ian Robertson. But the vehicle will have a steering wheel and most likely pedals. There will be a steering wheel because we want our drivers to be able to choose whether to drive themselves or be driven autonomously. Aside from that, it will be an extremely brave decision to remove the pedals and the steering wheel when, inevitably, you might need them in certain circumstances. I think it's going to be a long time before the regulators are prepared to let cars that cannot be driven by a person onto the streets.	BMW’s iNext expected 2021	Self-Driving CArs

States News Service April 21, 2017	BMW of North America has partnered with the National Park Foundation, National Park Service and Department of Energy to make electric vehicles a feasible option for travel to national parks."I can't think of a better way to celebrate the next 100 years of both the BMW Group and National Park Service than by making America's national parks more accessible to drivers of electric vehicles," said Ludwig Willisch, head of BMW Group .	BMW partnering with national park foundation to provide energy charging	Sustainability
Pittsburgh Post-Gazette May 17, 2017	Of the players involved in Pittsburgh's autonomous vehicles landscape, United Kingdom-based technology company Delphi remains relatively unnoticed - but a new, high-profile partnership could change that. Delphi, which has been testing autonomous Audi SUVs in Pittsburgh, announced a partnership with **BMW**, Intel and Mobileye on Tuesday morning. Delphi joins a partnership that **BMW**, Intel and Mobileye originally established in July 2016, working to create an autonomous driving platform that any original equipment manufacturer could adopt. Delphi will aid in systems integration to ensure the platform is sound and ready for deployment.	Delphi joins autonomous driving platform of intel and BMW	Self-Driving Car Partnership
CNN Wire May 24, 2017	The German carmaker is experimenting with a range of mobility services to try to connect with people uninterested in buying a car. **BMW** isn't the first automaker to embrace trends like ride-sharing and mobility apps. Competitors such as Daimler and GM operate car-sharing services. But **BMW's** tests in Seattle are unique in how the automaker is managing a fleet of 700 sedans and SUVs. ReachNow, a mobility venture that **BMW** launched a year ago, is experimenting with a hybrid model of ridesharing and carsharing. Sometimes a professional driver uses a fleet vehicle to give rides, much like Uber or Lyft do. The next day, that car might be parked on the street for customers to reserve and drive, a model akin to Car2go, GM's Maven and Zipcar.	BMW embracing ride sharing and mobility apps	Car-sharing

Plus Company Updates(PCU) June 20, 2017	Proterra, a major player in heavy-duty electric transportation, has closed a $55 million funding round with new investors **BMW i Ventures** and Al Gore's Generation Investment Management. The company plans to utilize the investment to increase production at its manufacturing facilities in South Carolina and Los Angeles, while also bolstering research and development efforts at the company's headquarters in Silicon Valley.	BMW I Ventures invest in Proterra a heavy-duty electric transportation company	Electric Vehicles Enabling investment
Business Wire June 28, 2017	"We're thrilled to partner with **BMW i Ventures** and deepen our relationship with General Electric," said Randy Altschuler, co-founder and CEO of Xometry. "We're accelerating our efforts to provide additional features to our online platform, making it easier for engineers and procurement managers to conveniently order a wide range of parts delivered by our expanding network of hundreds of manufacturers across the nation."	BMW led 15 million funding on Xometry	Emergent Investment
PR Newswire July 19, 2017	Shift (shift.com), a San Francisco-based startup that combines technology and a team of car concierges to take the hassle and guesswork out of buying and selling pre-owned cars, today announced that it has raised a $38M Series C financing led by BMW iVentures, with participation from new major **investors** DCM Ventures and G2VP, as well as continued participation from DFJ, Highland Capital, and Goldman Sachs **Investment**Partners. Christian Noske, a partner at **BMW** iVentures, has joined the Shift Board of Directors. Jason Krikorian fromDCMand Brook Porter fromG2VPhave joined as Board Observers.	BMW led $38M investment in Shift	Driving investment
PR Newswire July 19, 2017	Autonomous vehicle technology company Nauto,whose artificial intelligence-powered system and data platform is helping improve fleet safety and informing the development of self-driving technology, has closed a $159 million Series B financing round, led by a subsidiary of SoftBank Group Corp. and Greylock Partners. Other participants include previous strategic investors BMW iVentures, General Motors Ventures, Toyota AI Ventures and the venture unit of global financial services and insurance provider Allianz Group, and Series A investors Playground Global and Draper Nexus.	BMWpart of investment in Nauto AI data platform and system	Self-driving Car Enabling Investment
CNN Wire July 25, 2017	Uncertainty over Brexit hasn't stopped BMW from choosing to build its new electric Mini in the United Kingdom. The German automaker announced Tuesday it will produce the model at an existing factory in Oxford, England that employs 4,200 workers.	BMW build the electric mini in UK despite Brexit	Organisational Changes

	There had been concerns that BMW might build the new electric Mini at another facility, possibly one in the Netherlands.		
The Associated Press August 2, 2017	**BMW** said it would give owners of older diesels registered before 2009 an "environment bonus" of up to 2,000 euros ($2,360) if they trade in their older car for a new electric or hybrid model, or for a lower-emissions internal combustion car meeting current standards.	BMW handling older diesels high- emission cars	Sustainability
Investor's Business Daily August 16, 2017	**BMW**, Intel and Mobileye (MBLY), which is being bought by Intel, first announced last summer that they were teaming up to build a self-driving technology platform. Since then, auto suppliers Delphi Automotive (DLPH) and Continental AG have also teamed up with those companies.The platform would allow automakers to develop technology for highly automated vehicles and those fully capable of self-driving. The addition of Fiat Chrysler gives the partners the carmaker's engineering and technological capabilities, as well as its extensive footprint in North America and other markets, the statement said.	Fiat joins BMW Intel autonomous driving platform group.	Self-driving cars Partnership
Business Wire September 19, 2017	DSP Concepts, Inc. , a developer of embedded digital signal processing audio solutions and specialist in voice UI technologies, announced today that it has raised $10M in Series A funding, led by **BMW i Ventures,** with participation from Walden International Ventures and prominent angel investor David Tsang.	BMW funded DSP Concepts	Self-driving cars Enabling investment
Automotive News October 16, 2017	**BMW** is planning a small-batch hydrogen fuel cell car to be unveiled in 2022, said Matthias Klietz, head of the company's alternative powertrain group. Klietz was here for Royal Dutch Shell's energy conference last month to demonstrate a prototype **BMW** 5-series GT modified with a hydrogen fuel cell powertrain. The company doesn't expect large-scale production of hydrogen fuel cell vehicles to happen until after 2025.	BMW about hydrogen fuel cells	Sustainability
Business Wire October 20, 2017	Fair, an app that provides the first fully digital end-to-end way to get a car with the flexibility to return it anytime, announced today it is closing a strategic funding round led by BMW i Ventures that includes investments from Penske Automotive Group and other strategic investors. Fair's innovative offering allows customers to shop for a car they want	BMW led investment on Fair an app allowing flexible car ownership	Car-Sharing Enabling Investment

	and can afford based on a pre-qualified monthly payment range tailored to their budget, and includes the flexibility to walk away at any time.		
Investor's Business Daily November 27, 2017	along with a joint venture of top auto brands, will start offering charging stations in 10 European countries, the oil company announced Monday. Shell has teamed up with IONITY, a joint venture made up of **BMW Group,** Daimler AG, Ford Motor (F) and Volkswagen (VLKAY). The deal will include charging stations on 80 highway sites in Belgium, Britain, France, the Netherlands, Austria, the Czech Republic, Hungary, Poland, Slovakia and Slovenia, beginning in 2019.	Shell and joint venture including BMW starts offering charging stations	Sustainability Joint-Venture
GlobeNewswire December 11, 2017	GaN Systems, the global leader in GaN power semiconductors, has announced that Delta, the worldwide leader in power systems, has joined **BMW i Ventures** in participation of a strategic investment in GaN Systems. GaN Systems plans to use the funding to expand global sales and accelerate product innovation to help customers reduce system costs, increase revenue and gain market share. Today's announcement follows previous investments from prominent backers including **BMW i Ventures,** BDC Capital, Chrysalix Venture Capital, Cycle Capital Management, RockPort Capital and Tsing Capital.	BMW invests in GaN Systems	Emergent Investment
The Associated Press February 23, 2018	German automaker **BMW** says it's in talks to build battery electric models of its Mini cars in China, which would be the first time the iconic cars have been made outside Europe. **BMW** said in a statement Friday it has signed a letter of intent with Chinese manufacturer Great Wall Motor. China is the world's largest market auto market and **BMW** delivered 560,000 vehicles to customers there last year, of which some 35,000 were Minis.	BMW plans to build battery electric minis in China	Electric Vehicles
Business wire February 26, 2018	May Mobility, the first autonomous vehicle company to replace existing transportation systems with its fleets of self-driving micro-shuttles, today announced that BMW i Ventures and Toyota AI Ventures have joined its investor-base, co-leading its seed round. This funding will allow May Mobility to launch new deployments across the country. Other investors include Maven Ventures, SV Angel, Tandem Ventures, Trucks Ventures, and YCombinator.	BMW I ventures invest in May Mobility a autonomous vehicle company	Self-Driving Cars Enabling Investment

PR Newswire March 20, 2018	Blackmore Sensors and Analytics, Inc., a leading developer of frequency-modulated continuous wave (FMCW) lidar for the automotive industry, announced today that it has raised $18 million in a Series B funding round led by BMW i Ventures. Additional investment comes from Toyota AI Ventures, Millennium Technology Value Partners and Next Frontier Capital."Advances in new sensor technologies, like lidar, are going to make cars safer and, eventually, autonomous," said BMW i Ventures partner Zach Barasz. "Blackmore has unique and innovative FMCW lidar technology that delivers a new dimension of data to future vehicles."	BMW led financing round of 18 million for blackmore sensors	Emergent Investment
CE Noticias Financieras English March 21, 2018	The German automaker **BMW** will increase its spending on research and development (R & D) to a record high of up to 7,000 million euros (8,600 million dollars) during this year, as part of the efforts to bring 25 models of electric vehicles to the market for 2025.	BMW increases R&D spending for electric vehicles.	Research and Development
Global Round up April 6, 2018	The **BMW** Group and Daimler AG are joining forces to offer customers a single source for sustainable urban mobility services. The two companies today signed an agreement to merge their mobility services business units. Subject to examination and approval by the responsible competition authorities, the **BMW** Group and Daimler AG plan to combine and strategically expand their existing on-demand mobility offering in the areas of CarSharing, Ride-Hailing, Parking, Charging and Multimodality. Each company will hold a 50-percent stake in a joint-venture model comprising both companies' mobility services. The two companies will remain competitors in their respective core businesses.	BMW and Daimler merge their mobility services in jointventure	Mergers&Acquisitions
VentureBeat April 12, 2018	Sweden-based Mapillary announced today that it has raised a new round of financing to accelerate its development of an independent mapping data system for autonomous vehicles. The $15 million round was led by BMW i Ventures and includes money from the Samsung Catalyst Fund and NavInfo, as well as money from previous backers Atomico and Sequoia Capital.	BMW led financing 15 million round of Mapillary an independent mapping datasystem	Self-Driving Cars Enabling Investment
GlobeNewswire **April** 26, 2018	The new-business award, one of the first in the auto industry to include solid-state LiDAR for serial production, underscores Magna's ability to support customers with flexible, scalable solutions and transform innovative technologies into automotive-grade products. While Magna has demonstrated via MAX4 the capability to develop a complete	Magna and Innoviz Technologies, supply **BMW**with LiDAR for upcoming autonomous	Self-Driving Cars

	autonomous platform, it can also support customers by providing various building blocks of the overall system as in this case with **BMW**.	vehicle production platforms	
Los Angeles Times **May** 14, 2018	In the race to start the world's first driving business without human drivers, everyone is chasing Alphabet Inc.'s Waymo. BMW The maker of Ultimate Driving Machines doesn't see selling the ultimate riding machine soon. The company is testing completely self-driving cars developed with partner Intel Corp., which bought sensor maker Mobileye, and with German parts maker Continental. The self-driving **BMWs** aren't ready for the highways, **BMW** Chief Finance Officer Nicolas Peter said at a media event in Detroit. "This technology requires, from our perspective, some more time to have really fully automated cars on the road," he said.	BMW is behind on other companies considering self-driving cars	Self-Driving Cars
Automotive Monitor Worldwide May 16, 2018	BMW became the first foreign carmaker to be granted permission to test self-driving cars in Shanghai, China. A regulatory body, the Shanghai Commission of Economy and Information Technology awarded the two licences for BMW`s 7 Series sedans to test on a 5.6 km section of public road in Shanghai`s Jiading district. This development comes after the autonomous BMW 7-Series was tested on its AI-based self-driving functions and the internet linked aspects of this technology over a month at the National Intelligent Connected Vehicle (Shanghai) Pilot Zone. The car achieved a 99 percent success rate in these tests after which this testing license was granted. BMW is the third carmaker, after local manufacturers SAIC and electric vehicle startup Nio, to have been awarded this license since this practice was started in March. Both companies have notched up over 6000 km in testing with no incidents.	BMW granted permission to test self-driving cars in China	Self-Driving Cars
Corporate Wire Date 22 May 2018	The company's highly successful electrified vehicles are contributing strongly to the ongoing sales success and April saw the achievement of a significant milestone. "We are delighted to announce that there are now over a quarter of a million electrified BMW Group vehicles on the world's roads," said Pieter Nota, Member of the Board of Management of BMW AG responsible for Sales and Brand BMW. "Combined sales of BMW i, BMW iPerformance and MINI Electric vehicles were up 52% in April (9,831), bringing the total number of electrified BMW Group cars sold to over 250,000," Nota continued.	Milestone 250,000 electric BMW vehicles.	Electric Vehicles!!
Automotive Monitor Worldwide	BMWs crucial all-new 3-series is nearing its reveal at the Paris motor show later this year, where it will introduce a wealth of new tech and electrified powertrains before reaching	Nearing the reveal of new BMW 3-series	

May 23, 2018	UK showrooms in early 2019. The next 3-series, mooted to be called G20, will be launching with a new chassis architecture shared with the BMW 5-series and X3, and will allow the 3-series to add further electrified, and more interestingly, M Performance variants. Were led to believe that the 3-series will be available in an M340i version for the first time, finally giving BMW a direct rival to the Audi S4 and Mercedes-AMG C43. Due to feature the same turbocharged 3-litre straight-six as in the X3 M40i, power is expected to sit at around 360bhp. This model, and a possible M340d, are likely to be the only six-cylinder 3-series variants available (aside from the upcoming M3), and paired exclusively with eight-speed automatic gearboxes and all-wheel drive.		

Appendix 3 Volkswagen Data Analysis

Source	Data	Initial coding	Summary
The Deal Pipeline September 22, 2015	Fiat Chrysler Automobiles NV (FCUA) has vocally sought a merger partner. Volkswagen AG is suddenly reeling. Don't be surprised if Fiat CEO Sergio Marchionne makes a move. Germany's VW has lost nearly $30 billion in market capitalization -- about one third of its total -- this week after admitting that more than 11 million vehicles had software installed that allowed them to cheat diesel engine emission tests.	Fiat trying to make a deal out of the scandal	Mergers &Acquisitions
The Associated Press November 20, 2015	Volkswagen will cut its spending by 1 billion euros ($1.07 billion) next year and "strictly prioritize" investments as it shores up its finances to deal with its emissions-rigging scandal, CEO Matthias Mueller said Friday after a board meeting.	VW cutting down on investment as a result of emission scandal	Issues
Marketwired April 5, 2016 Tuesday	Mirantis(R), the pure-play OpenStack(R) company, today announced that Volkswagen Group has chosen OpenStack as its global standard for next-generation private cloud, aiming to drive innovation across business and consumer applications. The open source cloud platform is projected to cut IT costs through joint standardization. It will support internal and consumer-facing applications and will connect people across Volkswagen, its dealers and suppliers.	Volkswagen has chosen openstack as its private cloud	Connectivity

Palm Beach Post (Florida) April 25, 2016	"VW is committed to winning back the trust of its customers, its dealers, regulators and all Americans," VW attorney Robert Giuffra told the court. He called the deal "good for the consumers, the environment and good for **Volkswagen**." And also costly. The German carmaker revealed its diesel emissions cheating cost it about $18.2 billion for 2015 alone -- and that's likely only part of the total bill, the Associated Press reported.	Diesel emission scandal 18.2 billion	Issues
CNN Wire May 24, 2016	You may not have heard of Gett, but don't discount it. The Uber and Lyft competitor just got a major boost from Volkswagen. Gett, an Uber-like service that's popular in Europe, announced that it has formed a strategic partnership with the Volkswagen Group. It's getting a $300 million investment as part of the deal.	300million investment in get a car sharing app	Car sharing Enabling Investment
PR Newswire October 27, 2016	The 2018 **Volkswagen** Atlas, unveiled tonight on the Santa Monica Pier at the end of historic Route 66, launches a new chapter in the company's American history. Built in Tennessee, the seven-passenger Atlas offers class-competitive levels of technology and spaciousness combined with hallmark **Volkswagen** driving dynamics and attention to detail, all at a price designed to draw customers' attention in the family SUV segment.	New Volkswagen atlas for 2018	
PR Newswire November 15, 2016	Blesh, a startup company based in Palo Alto providing beacon platform services, has recently partnered with Volkswagen Turkey for its smart key fobs, to be sold online and handed out to new buyers starting from November 2016. The smart key fob is a beacon itself, as it works with Bluetooth Smart (aka Bluetooth Low Energy). It is paired with Volkswagen's mobile app, "Volkswagenim" (My Volkswagen).	Volkswagen partners with Blesh a beacon platform service provider	Passive Investment
The Associated Press November 22, 2016	**Volkswagen's** namesake brand hopes to bounce back from its diesel emissions scandal with a broad restructuring that will mean more battery-powered cars, digital services such as ride-sharing, and more SUVs for the U.S. market.	Volkswagen hoping to recover from scandal by focusing on tech	Issues
USA TODAY March 15, 2017	Volkswagen Group has opened a tiny crack in the door to a possible merger with rival Fiat Chrysler Automobiles, which, if it ever happened, would set off a potentially seismic shakeup in the global automotive industry. Volkswagen global CEO Matthias Mueller told reporters in Germany on Tuesday he would not rule out talks with Italian-American automaker Fiat Chrysler, according to Reuters.	Talks about merger with fiat chrysler	Mergers&Acquisitions

PR Newswire March 20, 2017	Wilmington Trust, N.A. has been appointed trustee for the **Volkswagen** Environmental Mitigation Trust. The $2.7 billion trust, established as part of **Volkswagen's** diesel emissions settlement, will be used to implement approved air pollution mitigation initiatives in U.S. states and federally-recognized Native American nations.	Volkswagen environmental mitigation 2.7 billion trust	Sustainability
Informationmanagement April 7, 2017	Mobvoi Inc., the Chinese artificial intelligence startup backed by Google, is getting a $180 million investment from Volkswagen AG to join a race to build the technology into cars.	Volkswagen invests in Mobvoi	Self-Driving Cars Enabling Investment
The New York Times June 22, 2017	Volkswagen is delving into quantum computing. BMW is building a giant new data center. And Bosch this week announced plans to construct a factory to build chips for self-driving cars. The moves are part of an expanding effort by European carmakers and suppliers to build the computing capacity — so-called big data — they will need as vehicles digitize and become driverless.	Volkswagen into quantam computing for big data	Research and Development
PR Newswire June 28, 2017	**Volkswagen** Group today announced it has upgraded its membership status in Cloud Foundry Foundation, home of the industry-standard platform for cloud applications, from Silver to Gold. **Volkswagen** joins the ranks of Foundation Gold members alongside Google, Ford, Allianz, Swisscom and GE. As a Gold member, **Volkswagen** now has the opportunity to nominate a candidate for one of the two designated Gold seats on the Cloud Foundry Board of Directors.	Gold member of cloud foundry foundation cloud applications platform	
The East Bay Times (California) July 28, 2017	In a decision with lasting implications for the growth of electric vehicles, state regulators on Thursday approved **Volkswagens** plan to **invest** nearly $1 billion into Californias EV network as penalty for its diesel-emission cheating scandal.	Volkswagen invest 1 billion in charging network	Sustainability
The New York Times August 2, 2017	The decision by the publicly owned European **Investment** Bank at least temporarily deprives **Volkswagen** of low-cost financing it badly needs for research and development during a period of technological upheaval in the automobile business. Traditional carmakers are struggling to keep up with upstarts like Tesla to develop electric vehicles capable of driving themselves. **Volkswagen's** resources have already been depleted because of the	Volkswagen banned for low cost financing as a result of diesel scandal	Issues

	company's admission in 2015 that it programmed 11 million cars to fool regulators. Penalties and legal settlements in the United States totaled more than $22 billion, and cases in Europe are pending.		
The Associated Press August 2, 2017	Transport Minister Alexander Dobrindt said the automakers will fit some 5.3 million diesel cars with new software, starting "in the coming months." The VDA auto industry group said that applies to most diesel cars of types made since 2009. It said the aim is to reduce nitrogen oxide emissions by 25-30 percent, and the overall figure includes 2.5 million vehicles already being refitted by Volkswagen.	Diesel cars need less emmision	Issues
Reuters September 29,2017	Volkswagen is taking another $3 billion charge to fix diesel engines in the United States, lifting the total bill for its emissions-test cheating scandal to around $30 billion.	Cost emission scandal around 30 billion total	Issues
Live Briefs PRO Global Markets October 11, 2017	The Volkswagen Truck & Bus division will **invest** EUR1.4 billion in new technology including electric drivetrains, autonomous systems and cloud-based software, Andreas Renschler, head of the unit, reportedly said. The group, which includes brands such as MAN, Scania, Volkswagen Caminhoes e Onibus, and RIO, has set itself the goal of increasing efficiency and improving environmental performance in the world of transportation, as well as of making it safer.	Volkswagen turck&bus invests 1,4 billion in new technology	Driving Investment
Live Briefs PRO Global Markets November 19, 2017	Volkswagen AG announced Saturday that the core brand of the Volkswagen Group will be investingabout EUR22.8 billion throughout the world from 2018 to 2022, a day after it announced a spending programme aimed at bolstering its position as a maker of electric cars.	Volkswagen invests in core brand and electric cars	Driving and enabling Investments
GlobeNewswire January 7, 2018	**Volkswagen** CEO Herbert Diess and NVIDIA founder and CEO Jensen Huang discussed on stage how AI is transforming the auto industry and highlighted the new I.D. Buzz, **Volkswagen's** exciting rebirth of the iconic VW MicroBus, reimagined in electric car form and infused with AI technology for the cockpit and self-driving.	Volkswagen partners with NVIDIA for AI technology	Self-driving Car Partnership
Chico Enterprise-Record (California)	The world's largest carmaker will equip 16 factories to produce electric vehicles by the end of 2022, compared with three currently, Volkswagen said Tuesday in Berlin. The German manufacturer's plans to produce as many as 3 million electric cars a year by 2025 is backstopped by deals with	Volkswagen focused on electric cars 13	Electric Vehicles

March 14, 2018	suppliers including Samsung SDI Co., LG Chem Ltd. and Contemporary Amperex Technology Ltd. for batteries in Europe and China.	more factories 3 million cars by 2025	
CE Noticias Financieras English March 15, 2018	The Volkswagen ID, a compact, will be the first to reach the market. "In April, the first pre-production prototypes will be presented," said Diess. Volkswagen wants this to be an affordable car. Diess calculates that in 2025 it will cost more or less the same as a Golf TDI. The price can be achieved thanks to the reduction in the price of batteries and a production process less expensive than that of an internal combustion vehicle.	Volkswagen aims at producing cheap electric cars	Electric Vehicles
CE Noticias Financieras English March 20, 2018	Volkswagen presented in Argentina the new Virtus, a sedan manufactured in Brazil that has as a "plus" the application of artificial intelligence and a high level of road safety. Virtus stands out for the technological. It includes IBM Watson, a system that answers more than 6,000 technical and usage questions and also understands natural language, with which the driver can interact with voice, text and photos.	Volkswagen presents new model Virtus with lots of technology	
The Associated Press April 13, 2018	Volkswagen's new CEO said Friday that the automaker must "significantly step up the pace" as it pushes into electric and self-driving vehicle technologies and shakes up its culture in the wake of a scandal over diesel emissions. Herbert Diess said a new management structure bundling the company's dozen brands in just three divisions would mean faster decisions as the company implements a broad strategy aimed at keeping up with changes in how people use cars.	Volkswagen focus on future tech	Future Investments
CE Noticias Financieras English April 16, 2018	**Volkswagen** Truck & Bus, a subsidiary of the VW group specializing in the manufacture of trucks and buses, admitted on Monday it bought the entire capital of the American truck manufacturer Navistar, worth about 2,961 million euros. **Volkswagen's** commercial vehicle division already controls 16.9% of North American Navistar, but will have, under US law, to make an offer on the entire capital of the American truck manufacturer.	Volkswagen bought Navistar an American truck manufacturer	Driving investment
Global Round Up April 23, 2018	Capita, which began working with **Volkswagen** Group in 2006, will continue to provide quality customer service to **Volkswagen** Group brands in the UK including **Volkswagen**, Audi, SKODA, SEAT and **Volkswagen**Commercial Vehicles, through its customer service support centre. This includes delivering customer care and technical services via phone, social media and the online service.	Volkswagen extends partners capita provider of customor service	

Live Briefs PRO Global Markets April 24, 2018	German carmaker **Volkswagen** has announced that it will **invest** in electric and self-driving vehicles in China. Together with its partners in China, the world's largest market for cars, **Volkswagen** plans to **invest** EUR15 billion (USD18.3 billion dollars) by 2022, VW China boss Jochem Heizmann said on Tuesday ahead of the 2018 Beijing International Automotive Exhibition	Volkswagen plans to invest 15 billion in self-driving vehicles in China	Self-driving Cars
CE Noticias Financieras English May 5, 2018	The investment is to assemble six-speed boxes that will be exported to equip high-level vehicles in Europe, of the Volkswagen, Audi, Skoda and Seat brands. The president and CEO of Volkswagen Argentina, Hernán Vázquez, together with the Governor of Córdoba, Juan Schiaretti, yesterday led a meeting at the Industrial Center that the German company has in Camino a San Carlos, where they presented the details of the investment of 150 million dollars that will be executed to produce a new model of gear boxes, called MQ-281.	Volkswagen invests locally for future gear box	Driving Investment
GlobeNewswire May 11, 2018	Florida is set to recieve a $166.3 million infusion of cash through the **Volkswagen** (VW) Environmental Mitigation Trust. The VW settlement is designed to fund projects that reduce emissions of nitrogen oxides (NOx).	Volkswagen trust to reduce emission	Sustainability
Israel's Business Arena May 22, 2018	German carmaker **Volkswagen** opened a Tel Aviv innovation center attended by Minister of Economy and Industry Eli Cohen to promote the development of autonomous vehicles, new mobility services and tailor-made solutions. The VW Group Campus in Tel Aviv will be a co-working space called Konnect, and will provide local partners and mobility based startups close and direct access to the **Volkswagen** Group including business collaborations as well as support in mentoring and consulting.	Opened tel-aviv innovation center	Research and Development
Automotive Monitor Worldwide May 22, 2018	Cubic Telecom, today announced that **Volkswagen** AG selected Cubic as the technology enabler on the all-new **Volkswagen** Touareg for its connected car experience. Touted as the most connected **Volkswagen** model ever, Cubic Telecoms embedded technology manages data delivery throughout Europe to enable Car-Net online services which are integrated with the Touaregs new infotainment system Innovision Cockpit.	Volkswagen partners with Cubic Telecom to provide technology	Partnership
CE Noticias Financieras English	After being rebuffed by BMW and Daimler AG's Mercedes Benz after seeking self-driving technology partnerships, Apple is now teaming with Volkswagen AG to modify VW vans into self-driving shuttles for Apple workers, the Times reported.	Volkswagen signs deal with apple for self-driving shuttles	Self-driving Vehicles

May 24, 2018	That project is said to be behind schedule and is now the primary focus of Apple's autonomous-driving unit, the Times said. The tech giant began that unit four years ago, and last summer the Times reported Apple had scaled back plans to build its own self-driving cars to focus instead on building software and technology for autonomous driving.		

Appendix 4 Daimler Data Analysis

Source	Data	Initial Coding	Summary
Marketwired June 21, 2016	Every major automotive company has announced plans for a car with self-driving capabilities, but only five carmakers -- Daimler, Honda, Hyundai, Toyota and Volvo -- earn a positive take in Lux Research's analysis of OEMs' autonomous vehicle efforts. In an emerging scenario of few significant technical differentiations and near-ubiquitous systems capabilities, Lux Research evaluated 12 carmakers and offered a "positive" rating based on three key criteria: demonstrated capability, investment and partnerships. "At the end of the day, the company with the best business plan will win the race toward autonomy," said Kevin See, Lux Research Director and author of the report titled, "Determining Who's in the Fastlane for Autonomous Vehicles: A Comparison of Automotive OEM Plans for Driverless Cars."	According to LUX analysis Daimler is leader in self-driving cars	Self-driving cars
The Associated Press August 1, 2016	German automaker Daimler is investing more than $10 million in chauffeur service start-up Blacklane. Daimler said it was investing an "eight-digit" sum in the service that operates in more than 50 countries worldwide. Blacklane allows users to book self-employed chauffeurs for a fixed price. The service primarily targets business travelers, whereas rivals such as Uber have focused on a broader customer base.	Daimler invests 10 million in Blacklane	Car sharing Enabling investment
Business Wire November 29, 2016	BMW Group, Daimler AG, Ford Motor Company and Volkswagen Group with Audi and Porsche have signed a memorandum of understanding to create the highest-powered charging network in Europe. The goal is the quick buildup of a sizable number of stations to enable long-range travel for battery electric vehicle drivers. This is an important step toward facilitating mass-market battery electric vehicle adoption.	Daimler partners up for charging network	Sustainability
Chico Enterprise-Record (California)	AutoGravity, a 2-year-old startup in Irvine, has landed a big investment partner in Daimler Financial Services AG. While terms of the investment were not disclosed, Reuters reported Daimler was making "a double-digit million euro" investment. Daimler Financial Services is a	Daimler invests in auto comparing app Autogravity	Emergent investment

February 20, 2017	division of German auto giant Daimler AG in Germany. In conjunction with Daimler, AutoGravity launched a national rollout across 46 states.		
PR Newswire March 2, 2017	ChargePoint, the world's largest electric vehicle (EV) charging network, today announced it has secured an initial $82 million in funding, part of a larger multi-million dollar fundraise, led by Daimler. The first close of the company's latest fundraising round is the largest in the Silicon Valley company's history. The investment will support the expansion of the company's charging network into Europe, enabling the region to complete the shift to e-mobility.	Daimler led chargepoint charging network's funding round	Sustainability
PR Newswire March 9, 2017	The Group's focus is on innovative and green technologies as well as on safe and superior automobiles that appeal and fascinate. Daimler consequently invests in the development of alternative drive trains with the long-term goal of emission-free driving: from hybrid vehicles to electric vehicles powered by battery or fuel cell. Furthermore, the company follows a consistent path towards accident-free driving and intelligent connectivity all the way to autonomous driving.	Daimler's investment strategy	
Dayton Daily News (Ohio) April 5, 2017	Automaker Daimler AG and industry supplier Bosch Group are teaming up to make driverless cars that they say could be on city streets at the start of the next decade. The companies would combine expertise in car making, sensors and software so that people in a specific part of town could order a shared car through their smart phone. The driverless car would pick them up and take them where they want to go.	Daimler and bosch team up in pursuit of driverless cars	Self-driving cars partnership
Las Cruces Sun-News (New Mexico) June 29, 2017	Workers at Mercedes-Benz's biggest engine plant, worried about their jobs as the carmaker shifts to electric technologies, are ratcheting up their fight over the site's expansion. To protest conditions offered by Mercedes parent Daimler AG as it negotiates adding new battery-making facilities at its Untertuerkheim plant in Stuttgart, Germany, staff will stop working overtime next month. Daimler says this will slow engine output, forcing it to cancel shifts for assembling the E-Class sedan.	Daimler shifting to electric technologies comes with protest	Electric Vehicles Issues
PR Newswire September 6, 2017	Daimler Mobility Services has participated as lead investor in a financing round of U.S. peer-to-peer carsharing market leader At the same time, Daimler peer-to-peer carsharing activities under the Croove brand will be combined with TuroExpertise and experience of Croove will serve as the basis for Turo to enter the German market within the next yearInvestment in Turo is a further step in the implementation of the Daimler CASE themes	Daimler is lead investor in Turo carsharing market leader	Car Sharing Enabling investment
Business Wire September 12, 2017	TomTom has been chosen by Daimler as the maps supplier for its infotainment platform in North America. TomTom's trusted map components will run on the Mercedes infotainment platform in a range of the automaker's A, C, B and E-class vehicles	Daimler partners with TomTom for infotainment	Connectivity Partnership

PR Newswire September 14, 2017	Daimler AG's Trucks division leads new financing round of Israeli nanotechnology materials pioneer StoreDot Ltd.Daimler becomes a strategic partner to accelerate the adoption of FlashBattery technology to the Electric Vehicles market FlashBattery technology enables charging any electric vehicle as quick as filling a tank of gas Cooperation underlines Daimler Truck's commitment to customer-centric electric vehicles	Storedot financed by Daimler. Nanotechnology	Emergent Investment
Live Briefs PRO Global Markets September 15, 2017	German automaker Daimler AG's Mitsubishi Fuso division announced the global launch of its all-electric FUSO eCanter light-duty trucks in New York City on Thursday. Daimler noted that delivery service giant United Parcel Service is the first US commercial partner for the eCanter.	Daimler partners with UPS to use their electric trucks	Electric Vehicles Partnership
Live Briefs PRO Global Markets September 22, 2017	German carmaker Daimler AG announced plans to invest USD1 billion in an existing manufacturing plant in the US state Alabama, where the assembly of electric sport utility vehicles is planned to begin after 2020.The luxury carmaker also said it plans to build a new battery plant near the existing Tuscaloosa factory, which opened 20 years ago in the southern US state. Construction work on the new facility is expected to begin in 2018, with operations to start at the beginning of the next decade.	Invest 1 Billion in assembly spot of electric sport utility vehicles	Electric Vehicles Enabling Investment
Business Wire January 4, 2018	REV Group (NYSE: REVG), a $2+ billion manufacturer of industry-leading specialty vehicle brands and leading provider of parts and services, announced today that its subsidiary, REV Coach LLC has been awarded the **Daimler** AG's bus division North American sales rights to Setra Brand Coaches.	Daimler partners with REV group a provider of parts and services	Driving Investment
The New York Times February 24, 2018	The Chinese businessman who owns the Geely automotive group has acquired a $9 billion stake in Daimler, the German maker of Mercedes-Benz cars and trucks. The investment by Li Shufu, which Daimler confirmed Friday in a regulatory filing in Germany, represents 9.69 percent of the company. In a statement, Daimler said it was pleased to have Mr. Li as a "long-term-oriented shareholder" and described him as " an especially knowledgeable entrepreneur with a clear vision for the future, with whom one can constructively discuss the change in the industry."	Li Shufu has acquired 9 billion stake almost 10 % of Daimler	Mergers&Acquisitions
PR Newswire February 26, 2018	Anagog Ltd. , developers of the mobility status AI engine and big data analytics solutions, announced today the initial closing phase of its Series-B round of financing. The round is being co-led by Daimler AG, the automotive OEM, and Mizmaa Ventures, a California-HK based VC, specializing in artificial intelligence, machine learning, and big data venture investments.	Daimler leads financing round in Anagog an Ai and big data company	Self-Driving car Enabling investment

CE Noticias Financieras English March 8, 2018	Daimler (DDAIF.PK) announced it has become a shareholder in Beijing Electric Vehicle Co., Ltd., a subsidiary of BAIC Group, through acquisition of a 3.93% stake. As one of China's leading pure electric vehicle manufacturers, BJEV's primary business scope covers research and development, production, as well as sales and services for New Energy Vehicles and core NEV components.	Daimler buys stake in BEV electric vehicle manufacturer	Electric Vehicles Enabling Investment
The New York Times March 16, 2018	Germany was caught off guard after one of China's wealthiest men last month amassed a $9 billion stake in **Daimler**, a crown jewel of Germany's auto industry. Li Shufu, the chairman of the Chinese car giant Geely, made the grab through a financial maneuver before anyone even realized what was happening. Last year, the German company rejected a proposal by the Chinese businessman to take stakes in the company. The stealth purchase over months made Mr. Li the largest shareholder in **Daimler**. The German authorities are examining whether the purchase adhered to German **investment** laws. But it is unlikely that either **Daimler** or the German government can do anything about the acquisition.	Li Shufu buys a large stake in Daimler. Germanry does not like the Chinese input.	Mergers&Acquisitions
PRNewswire May 18, 2018	Kamaz (MOEX: KMAZ) and Daimler are ready to invest over 46 billion rubles to implement projects under a special investment contract (SPIC), the deputy head of the President of Tatarstan's press office Liliya Galimova said at a press conference. "This concerns a document to develop a range of Kamaz and Mercedes-Benz vehicles and modernize production facilities to manufacture them. The SPIC will be implemented over 10 years. Investment from Kamaz will total 38.6 billion rubles and Daimler Kamaz Rus - 7.7 billion rubles," Galimova said.	Daimler and partner kamaz invest in new product production	