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Management control systems in private equity investments

Case study of a Finnish private equity fund

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Abstract of master's thesis

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Objective of the study

This thesis examines how private equity investors employ management control systems in strategy implementation during their ownership of buyout targets. Private equity investments differ from industrial acquisitions in that they have a predefined lifespan, an intention and even a schedule to be sold further. Private equity funds also tend to have more complex governance structures. However, management control systems in private equity investing have gained scarce attention among academic research. Notably, there is a lack of longitudinal single case studies sensitive to actual context of private equity and its contingent factors. The research illustrates the lifespan of a cleantech fund and uses Simons' (1995) Levers of Control framework to analyze, how private equity investor implemented strategy into the target companies by using management control systems. Distinctive motivation behind this research is the expansion of scope from governance of a single buyout company to a wider private equity context. This scope is sensitive to factors that potentially influenced management control systems beyond the boundaries of a single target company.

Method and framework

The research adopts a longitudinal, retrospective single case approach together with an exceptional method of systematic combining. Systematic combining differs from traditional linear approach by its non-linear, continuous back and forth integration of theory and empirical observations in order to match theory and reality. It is appropriate for research on subjects that have slight body of existing research. Expansion of research scope in aforementioned way raised the need to integrate additional and relevant theoretical insights into the framework. Consequently, literature reviews on private equity and management control systems were complemented with theoretical concepts that shed light on entrepreneurship, ownership and capabilities.

Findings

This research generated multiple findings and insights. Generally, management control systems supported alignment of the whole fund with the perceptions and wishes of the original investors. The examined fund management implemented management control systems and especially interactive controls in remarkably various ways for a growth business. The case demonstrates how management control systems were not designed and used in isolation from factors such as ownership, parent organization and capabilities. Parent company and its customers as potential investors were taken into account in early formulation of beliefs and boundary systems. Furthermore, the fund had a distinct investment "philosophy" with indirect implications for diagnostic and interactive control systems. Private equity buyout research also has a tendency of limiting scope to single organizations. Such scope limits realization of investor's potential. Notably, this exceptional case illustrates how private equity investor had a comprehensive entrepreneurial plan that defined exploration and orchestration of resources acquired through buyouts.

Keywords private equity, buyout, ownership, strategy, management control systems, capabilities

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Writing this master's thesis has been a rewarding journey. It has provided an opportunity to explore theoretical subjects of own personal interests and combine knowledge acquired through recent education together with observations of practical business. The research reported here covers only a part of the outcomes. During this project I have gained even more insights on theory and practice than this page count and research scope can capture. Before most, I feel privileged to have been able to work on subjects that inspire me personally. However, this has not been a one man show. There are several people who deserve recognition for enabling, supporting an encouraging me to go the distance.

Linking interesting theory to such an exceptional empirical case would not have been possible without a valuable contribution of Tero Luoma. Dear Tero, I wish to express you my gratitude for arranging me access to the case with rich data sources. I also highly appreciate your encouraging and insightful feedback that advanced my research. As a part of the case examination, I interviewed four persons. While securing your anonymity, I want to thank you greatly for your time and willingness to contribute to this research.

Designing and organizing a research on a complex case setting had many inherent challenges that required professional academic guidance. Therefore, I want to express my special thanks to my supervisor assistant Professor Katja Kolehmainen. Dear Katja, I'm grateful for giving me precious advice and professional guidance in general from the very beginning until the remarks of the final stage. Especially I appreciate the way how you encouraged me to choose the path of going an extra mile. I find it was really worth it. Thank you.

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reflect and genuinely combine theory with practice. It has enabled to develop more abstract thinking and adopt a critical attitude. Combined with administrative easiness and a comfortable culture at the department of Accounting in general, I have continuously been motivated to carry on. I feel like this spirit would be embodied in my thesis to some extent.

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Thomas Taussi

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1 Introduction

Management control systems (MCS) in Private Equity (PE) investments have gained relatively scarce attention. Conventional MCS frameworks (e.g. Simons 1995) focus on strategy implementation and internal strategic renewal of rather mature industrial organizations. The term "private" in PE stands for the opposite of being listed in public stock exchange. PE investing implies active ownership and is often related and even mixed with the term Venture Capital (VC). Certain characteristics deviate typical PE investments apart from operational and even strategic investment projects of industrial organizations that fit into aforementioned MCS literature. Whereas industrial organizations typically invest without a predefined intention to sell assets further (Barber & Goold 2007), buyouts under PE ownership have a predefined lifespan (Kaplan & Strömberg 2009). Thus, PE investments cannot be related to all acquisitions by default. Another difference is the degree or even nature of influence. It is suggested that PE ownership without intention to hold would not be suitable to integrate and build synergies between investment targets (Barberg & Goold 2007).

Implementation of strategy and maintaining its renewal in PE setting differs from conventional MCS literature that focuses on single organizations and takes their senior managers as the highest authority of control. Typically, PE investments are organized by a PE fund that governs its portfolio companies (Gilligan & Wright 2008, 18). In such case, implementation of MCS needs to flow across formal organizational boundaries. Furthermore, factors beyond the boundaries of the target companies may potentially influence MCS practices of strategy implementation. However, only few papers explicitly integrate comprehensive MCS frameworks such as Levers of Control (LOC) of Simons (1995) into buyout research or even issues of ownership in the first place. Due to slight body of research, there are various aspects related to the use of MCS in PE investing that define a fruitful research space.

The rest of the introduction part will be structured as follows. First, existing literature, its limitations and potential research space will be discussed more specifically. Second, objectives of this research will be defined. Third, exceptional method of systematic combining that was used in this single case research will be introduced. Fourth, the structure of this thesis will be presented.

1.1 Background and research space

As mentioned above, few studies on MCS and PE do exist. Bruining et al. (2004) examine strategy change in four buyout cases by using LOC. The use of more than one case enables comparisons and ground for diverse findings. Aforementioned authors find evidence that buyout managers undertake efforts to balance "traditional" control systems with "newer" systems that stimulate opportunity-seeking and learning. Equivalent levers are also present in research of Nisar (2009) that examines the evolution of MCS in leveraged buyouts. The author applied both qualitative and quantitative methods with a larger number of buyout samples. Findings demonstrate variety of specific outcomes which can be tied to contingent factors such as cost leadership and differentiation strategies. Worth noting is that quantitative samples describe attributes of MCS in a certain point of time. Despite having qualitative depth, aforementioned cases are not constructing a longitudinal path of strategy implementation with MCS. Furthermore, common for these studies is their limited focus on MCS attributes of the target company. Precisely said, scope has typically been limited to regard separate target company as a unit of analysis.

Consequently, numerous aspects of MCS in buyout context have not yet been researched. Changes and even retention of MCS practices are results of managerial activities. Based on above mentioned papers we do know tentative links between certain contingent factors and MCS attributes in buyout context. However, these factors are closely related to buyout companies under examination. The role of PE setting involving potential general and limited partner investors remain little studied. Despite the topic of the paper by Nisar (2009), "Evolution of Management Control Systems in Leveraged Buyouts", there remains lack of in-depth longitudinal research on the development of MCS in PE buyout context.

Bruining et al. (2004) recalls more longitudinal studies on the subject. Even the common practice of having separate single companies as units of analysis may hinder aspects of MCS and their role for investment directors governing target companies. In a recent quantitative analysis on management practices of PE owned firms, Bloom et al. (2015) have a similar caution. They recall that identified superior management of PE owned firms could come entirely from purchasing well-managed firms, rather than improving their management over time. Arguably, this also implies the need for longitudinal and case-specific studies. Quantitative studies have helped to form a general picture of PE practices, but the actual active ownership and influence in target companies still remains to a great extent a black box.

1.2 Objectives

The research question of this thesis has been summarized briefly in the following sentence:

> **How do PE investors employ MCS in strategy implementation during their ownership of buyout targets?**

More comprehensively, the purpose of this research is to examine MCS in PE context in a way that contributes to the research space identified above. The empirical setting will involve a single case of a PE fund that is a branch of a larger asset management group. As defined, the focus will be laid on strategy implementation by the PE investors during their ownership period of the buyout targets. Deviating from existing research on the subject, single case research enables in-depth and longitudinal approach to MCS in PE buyouts. Thus, one objective is that of constructing a robust description of the path behind examined PE fund, its investments and strategy implementation. Distinctive for this research is the expansion of scope from governance of a single buyout company to a wider PE setting. Single case examination is sensitive to factors of the PE setting that potentially influence MCS beyond the boundaries of the target companies. In addition to analyzing interrelations between the PE fund management and the target companies, parent company of the PE investors and its customers as investors are closely linked to the setting. Furthermore, PE fund management may have particular capabilities and approaches to investing that can be seen from MCS practices. At this point, worth noting as a clarification is that this research still emphasizes the MCS within the PE fund and not the MCS of the department of PE investors within the asset management company. Despite the few existing studies on MCS in PE buyouts, preliminary literature does not provide sufficient examples of in-depth research with similar scope. Thus, this gap also imposes the need to construct theoretical framework beyond existing PE and MCS literature to match with the empirical case.

Research space can be motivated by analyzing interrelations of existing theories and contemporary development. As mentioned already, literature linking MCS to PE or even ownership is notably scarce. As a result of applied research method of systematic combining, this research builds theoretical framework further in order to describe empirical case more accurately. Consequently, contemporary theoretical concepts related to ownership and resource orchestration will be introduced. To some extent, their theoretical roots have been introduced as well. Essentially the approaches of entrepreneurial judgment (Foss & Klein 2012) and dynamic capabilities (Teece 1997; 2007; 2012) will be utilized.

1.3 Method

To examine the use of MCS in PE buyouts, and more specifically, to expand scope from single organization to a wider setting of PE investing, the research will be conducted as a longitudinal, retrospective single case study applying systematic combining. As implied in the objective of this research, lack of existing studies with similar scope imposes a need to develop framework to match empirical case. The method of systematic combining has been chosen primarily for the reason that it enables incremental development of framework that is sensitive to the particular empirical case. Systematic combining differs from traditional linear approach by its non-linear, continuous back and forth integration of theory and empirical observations in order to match theory and reality (Dubois & Gadde 2002). As described by the authors, constant matching of framework will occur during research, when new insights arise from empirical world. Again, framework directs the search for empirical data. Furthermore, observations may lead to unanticipated discoveries with further implications. Case studies provide unique opportunities to develop theory and utilize in-depth insights of empirical phenomena and their contexts. (Ibid.) Furthermore, single case research and systematic combining enable extensive attention to longitudinal and context-specific issues implied in the research question.

The unit of research is a single PE fund managed by an asset management company. Typically, PE funds consist of numerous idiosyncratic targets, which should provide multiple units of research. In this case, however, level of analysis will be the whole fund of interrelated units. Justification for this fund-level examination will be discussed further in the method chapter. Furthermore, single case method and systematic combining can be supported by various notions emerging from case-specific issues, theoretical framework and preliminary methodological literature as well. These underlying notions will be introduced in the method part as well.

This research employs different sources of data. Interviews are the primary sources that enable to shed light on interrelations, perceptions and experiences on aspects found from other data sources. Altogether, four persons were interviewed. These persons were selected by their relevance to strategy implementation in the examined case fund. Other data sources include informant documentations about organization policies and accountabilities, Power Point presentations on investor materials and strategic plans, spreadsheet valuations and financial new, to name few. Diverse data sources support triangulation. In systematic combining, it not only supports checking results, but contributes to discovery (Dubois & Gadde 2002).

1.4 Structure

This thesis will be structured as follows. The framework part will be introduced next. It defines relevant literature and concepts for PE and MCS. Furthermore, as a result of the systematic combining method applied in the research, additional theoretical concepts will be integrated into the framework. Based on PE and MCS literature together with new concepts, a synthesis part will be constructed. Interrelations and potential applications of these elements will be discussed in it.

Framework will be followed by the method part. Research will be positioned, and details of the setting and the research space will be specified. Essentially, research design and longitudinal research process by using the exceptional method of systematic combining will be introduced comprehensively. Additionally, justification for method will be enhanced by introducing views from the relevant framework literature that recall more case studies on subjects in question. Reliability and validity issues of the research will be taken into account in an own topic as well.

Case will be introduced together with an integrated analysis. First, the case company and the PE setting will be described. Second, historical path of the fund strategy implementation originating from the imagined business opportunity and exploration of suitable target companies will be introduced and analyzed. Third, MCS of higher order will be examined by using LOC and revised framework. Fourth, activities that were stated in strategic planning materials of the fund are being examined. These activities that were used in strategy implementation with more operational relevance will be analyzed in light of MCS. Additionally, other elements of the framework will be applied in the analysis as well.

Essential findings of the case and analysis part will be discussed in the actual discussion part. First, MCS will be discussed in the particular PE context. Second, general tendencies of the use of MCS by the examined PE fund will be identified and positioned against the literature. Third, activities that implement intended strategic plan will be discussed in light of MCS. Furthermore, identified processes of dynamic capabilities will be linked to MCS research as well. Finally, there is a part for conclusions and implications that approaches the research findings from even more abstract level. This part includes theoretical and managerial implications, limits of the research and ideas for further research.

2 Framework

The framework of this thesis consists of three literature review sections and a synthesis part. The first section introduces private equity (PE) literature and helps to understand the industry under case examination. The second section covers management control systems (MCS) as the major theoretical frame to be used in empirical analysis. The third section is formed by a diverse selection of relevant theoretical concepts from fundamental and contemporary organization science. These insights support matching empirical reality of PE investments further with theoretical understanding of MCS. Additionally, the fourth part aims to reflect aforementioned theoretical sections and serve as a guide for conducting research further. Construction process and relevance of the framework will be discussed more extensively later in the method part.

2.1 Private Equity

> *"Only by demystifying the PE phenomenon can we make the detailed case-by-case analyses needed to judge its strengths and weaknesses."*
>
> Peter G. Klein, John L. Chapman, Mario P. Mondelli (Klein et al. 2013)

2.1.1 Definition and characteristics

As terms, Private Equity (PE) and Venture Capital (VC) have slightly varying purposes that require special attention. In very general level they both can be seen as umbrella terms describing transactions of private capital (not listed in public stock exchange). In such cases there is no distinction between PE and VC. In professional contexts, however, PE and VC are used to describe particular industries, mostly by the stages of target companies. For example, many general associations such as The European Private Equity and Venture Capital (EVCA), The British Private Equity and Venture Capital Association (BVCA) and The Finnish Venture Capital Association (FVCA) relate to both categories, but emphasize only one in their letter abbreviations. In their PE handbook Gilligan & Wright (2008, 10) note that PE has no consistent definition. The authors mentioned that PE often covers VC investments in relatively early stage companies. The authors chose a definition that excluded VC and focused on more mature buyouts. Additionally, Kaplan & Strömberg (2009) notice that VC firms typically do not obtain majority control, whereas PE firms typically buy majority control of existing or mature firms.

Wright et al. (2001a) has created a classification for different buyout types, implying different roles for VC and PE. This distinction can be supported empirically. Kelly (2012) examined drivers behind investment activities and the question, if PE and VC investors are really so different. The paper started from the idea that PE cannot be treated as a whole, but rather as a heterogeneous asset class. As a result, early stage VC and later stage buyout capital (PE) were examined separately. Findings conclude that clear differences do exist. Especially VC investors have been identified to invest in high-growth companies, whereas drivers of PE investors relate more to financial engineering. Apparently, aforementioned classifications resemble each other. Furthermore, Knigge, et al. (2006) have also found differences between the drivers of PE and VC performance. The former has found to be driven more by managerial experience, whereas sensitivity to market timing defines the latter.

Another empirical difference between PE and VC is active ownership. VC investors appear to be more heterogeneous according to their role in corporate governance. Elango et al. (1995) distinguish three types: "inactive", "active advice giving" and "hands-on" venture capitalists. Although, more recent research suggest that the variety of VC may vary depending on country-specific institutional settings (Bruton et al., 2009). However, whereas VC investors may easily have limited involvement in early stage investments, PE investors that usually perform LBOs tend to strive for majority control (Kaplan & Strömberg 2009).

This thesis will apply the definition of PE favored by recent academic literature. Unless specified, PE will be used to describe non-quoted capital transactions of relatively later stage buyouts. Consequently, early stage VC will be ruled out from the definition.

2.1.2 Transaction types

In addition to differences between PE and VC, formal types of PE takeovers are often classified in academic literature. Major types are insider-driven and outside-driven buyouts. Their sub-categories deserve short review, since the role of incumbent management has implications for the research. All types of buyouts imply ownership change, but not all imply changes in operating management.

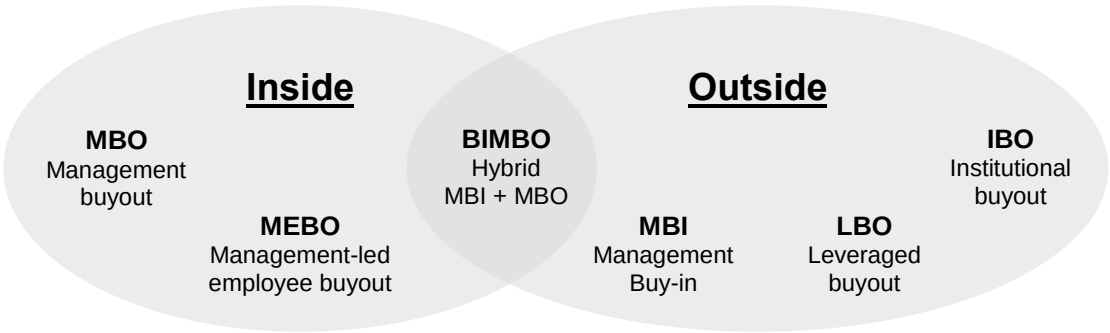

Figure 1. Summary of PE transaction types

In insider-driven buyouts existing management takes control of the organization, sometimes together with a PE firm. Management buyouts (MBOs) and Management-led employee buyouts (MEBOs) represent this type. (Wood & Wright 2009) On the contrary, an outside-driven buyout type called Management buy-in (MBI) implies management change (Robbie & Wright 1995). In such case management team will consists of outsiders. There is yet a possibility that a transaction will include elements of both insider- and outside-driven buyouts. This combination of MBI and MBO (BIMBO) will employ mix of expertise to overcome information asymmetry problems of MBI (Wood & Wright 2009). Other forms of outside-

driven buyouts are not defined by the role of incumbent management. Kaplan & Strömberg (2009) use Leveraged Buyouts (LBO) as a synonym for typical PE transactions. The name comes from the substantial amount of debt usually utilized in the transactions by PE firms. Institutional Buyouts (IBOs) mean buyouts conducted by an institutional investor such as a PE firm (Gilligan & Wright 2008, 97). Notably, LBOs and IBOs can often be related. Although there is no theoretical necessity for IBOs to require substantial leverage.

This research focuses on outside-driven buyout category and emphasizes mainly IBOs/LBOs due to the substantial use of leverage. The role of incumbent management as owners has implications for governance and MCS. Instead of managers buying themselves independent, it is the outside-driven buyout, where new owner(s) constitute(s) an additional governance layer. Thus, the balance between empowerment and control becomes more important.

2.1.3 PE as active ownership

Private Equity is best understood as a form of active ownership. Jensen (1989) distinguished active and passive types of ownership, going so far as predicting the decline of traditional public firms and replacement by LBO associations representing the PE industry. To be more precise, by the term "active" I refer to those actions of shareholder that strive to influence corporate management and boards. Gillan & Starks (1998) define shareholder activism as a continuum of responses to corporate performance, emphasis being laid on the use of voice. The logic applies for both publicly listed and private companies. The definition implies that bare trade of shares, even being a frequent activity related to ownership change is not enough to make ownership "active" in the quoted sense. Review of the opposite "non-active" or passive ownership as a counterpart of active ownership will provide a useful contrast. Furthermore, discussion about Efficient Market Hypothesis (EMH) and its critics help to realize the position and logic of active ownership typical for PE industry.

2.1.3.1 Passive ownership

Common portfolio investing is a typical form of passive ownership. Returns are result of buying, holding and selling stocks. Portfolio investors utilize general knowledge when trading publicly listed companies. According to the EMH (Fama 1970), efficiently functioning markets would immediately incorporate general information into stock prices. Thus, there should be no opportunities left for investors to gain extraordinary returns. This portfolio theory implies that rational investor should become a passive owner, invest in a diversified portfolio of stocks and merely hold them to gain risk-adjusted market returns.

EMH, its assumptions and their empirical validity have been thoroughly researched and discussed critically without clear conclusions. Certain points from the whole variety of literature are worth additional focus. Pasour (1989) suggests that EMH is an example of yet another static economic theory that neglects the role of entrepreneur and discovery process of market opportunities. EMH implies that general information should necessarily lead to homogeneous implications, thus equating access to information to profit. Shostak (1997) suggests that the major problem of EMH is its expectation of rational expectations forecast, which implies existence of a true intrinsic value. Thus, focusing on the market participants utilizing general information shifts attention from specific information and subjective opportunity discovery. Israel Kirzner (1973) defines entrepreneurship as individual alertness to profit opportunities not seen by others. Vital knowledge affecting the individual decision-maker is not explicit (Pasour 1989). As Hayek (1945) noted, "there is a body of very important but unorganized knowledge" that of "the particular circumstances of time and place."

EMH describes efficient asset valuation, the core performance driver of passive ownership. It implies that there would be no systematic opportunities to beat the markets by buying undervalued stocks and selling them further. Thus, EMH does not cover active ownership, which by definition involves owner's labor to leverage returns for committed capital. Owner's activity to participate in governance implies existence of a profit opportunity available for a combination of capital, labor and subjective judgment. It must be noted that EMH neglects the role on entrepreneur described above. Certain critics of EMH emphasize that financial markets cannot be distinguished from other markets, since all economic activities involve entrepreneurial opportunity discovery (Pasour 1989, Shostak 1997).

2.1.3.2 Active ownership

Active and "non-active" (passive) ownership should not be treated literally as complete counterparts. Rather, active ownership brings additional elements and complexity into consideration. Income of an active owner has two sources. First, equal to passive owners, active owners can benefit from identifying and buying potential undervalued companies. Second, unique to active owner is the chance to increase value through influential governance. Whereas passive owners seek to employ superior knowledge in their transactions, active owners in a sense aim to create that valuable information themselves. Studies (e.g. Becht et al. 2009) indicate that influential shareholder activism, rather than picking right companies, can outperform passive peers.

There is an opportunity cost of labor for an investor if one chooses to become an active owner. This costly effort must have a potential to lever return to committed equity enough to break even with direct labor and the expected returns of passive ownership. Mere superior return rate is not sufficient to bring advantages. It is the absolute return, which depends on the volume of capital invested by an active owner. Furthermore, there is yet another reason for ownership stake to be relatively significant. Larger ownership stake ensures power to influence and implement own ideas. Thus, efforts are more easily realized in outcomes and ready to be capitalized. PE investors as typical active owners usually have majority ownership in their target companies (Kaplan & Strömberg, 2009).

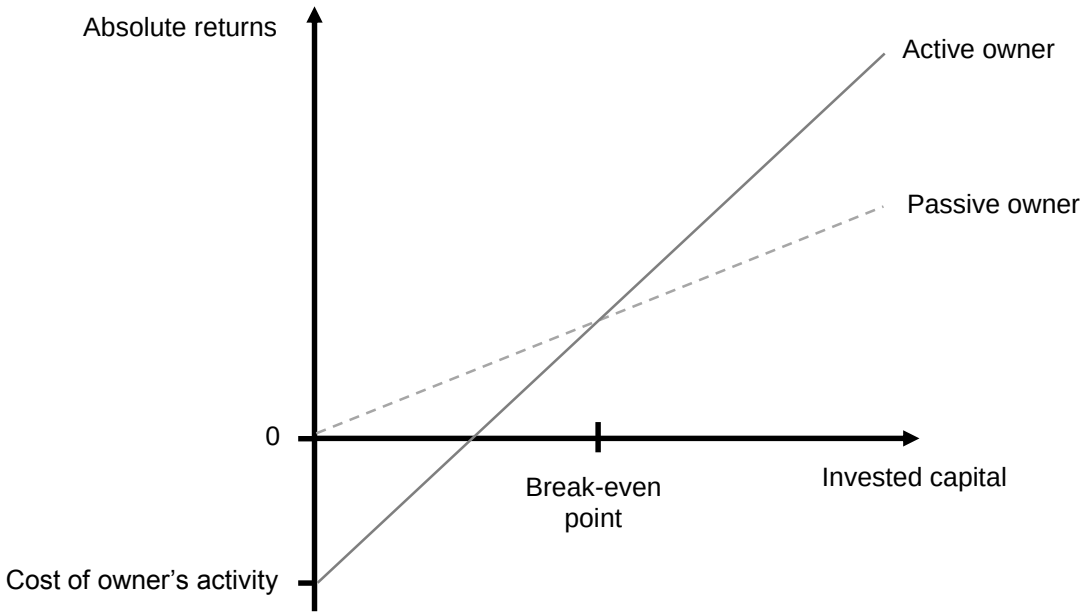

Figure 2. Cost and benefit analysis of ownership types

Figure 2 above demonstrates conditions and payoff of active ownership through a simplification of two scenarios. First, it is assumed in the example above that the investment generates returns with a positive rate. Shareholder activism will be equivalent to a fixed amount of labor and thus a fixed opportunity cost. In turn, there are no comparable costs involved in the case of passive ownership. Furthermore, shareholder activism is assumed to have a positive impact, an ability to lever up return rate for committed equity capital. With these assumptions, there will be a break-even point where returns for active ownership exceed returns for passive ownership. Thus, the more there will be committed capital, the more profitable will active ownership become compared to passive ownership. Worth noting is the limited ability of the

model to capture dynamic reality. Potential and easiness to have impact on the target company depends on the governance power based on equity stake.

Both sources of income, returns for holding assets (passive ownership) and levering returns for additional value-increasing activities (active ownership) are entrepreneurial in a sense that they include profit opportunities to discover. First, potentially undervalued target companies must be identified. Since the future is uncertain, opportunities will be assumed to exist. Existence is not equal to recognition, since opportunity discovery may depend on specific knowledge not available to everyone. Second, potential target companies do not need to be undervalued, if only the bidder has enough potential to create value. These opportunities are present in firm-specific attributes, which require governance and managerial decisions to be seized. Again, opportunity discovery can depend on specific knowledge. In this sense public financial markets are no different than other markets, such as market for corporate control.

2.1.3.3 Comparison

Differences between active ownership and more common forms of ownership, such as portfolio investing, have been recognized. The nature of PE, where potential buyout targets need to be searched outside the exchange of quoted companies decreases the explanatory power of EMH and traditional portfolio theory in this context. Such cases involve specific information, which is costly to acquire. Gilligan & Wright (2008, 22) concludes that before transaction decisions PE funds can access to private information. On the contrary, public transactions involve only public information equally available for all. The same applies after the deal has been made. PE managers receive frequently sensitive information, while quoted equity investors only receive public information.

Adopting the view that the future is uncertain (Knight 1921), returns and costs of acquiring information cannot be foreseen and defined ex ante. Therefore an idea of an objective state of equilibrium is merely a misleading thinking tool. Uncertainty implies that expectations and perceptions of opportunities depend on individuals using judgment on resource allocation. Describing such a way of thinking or acting Foss & Klein (2012) use a term "entrepreneurial judgment", with a distinction to mere opportunity discovery mentioned above. Notions of EMH neglecting the role of entrepreneurial judgment apply in case of public stock exchange. More explicitly, the importance of entrepreneurial judgment gains strength in PE industry relying more on unique perceptions made of private, specific information.

2.1.3.4 Relevance of MCS

Arguably, variety of MCS will be more relevant in PE than in VC investing. As discussed earlier, VC investors may have more passive and advice-giving roles when compared to generally active PE owners. Especially in cases of LBOs, funding arrangements are inflexible. Furthermore, when startups grow, more emphasis will be laid on control systems (Simons 1995, 128). These distinctions imply that PE investors would be generally more responsible for balancing both empowerment and control. Thus, compared to VC or the abstract definition of PE, there is yet more relevance for the use of MCS in PE investments, when the term has been understood as a definition of later stage buyouts.

Active owners can be expected to use MCS in various purposes. The possibility that PE investors understand aspects of MCS and consider them already in target evaluation phase and due diligence cannot be neglected from straight hand. Practices involved in governance and MCS become central tools for active owners to influence firm-specific attributes as discussed. Rather than realizing ownership and governance as a unidirectional top-down flow, a circular model of Connelly et al. (2010) will be adopted. Thus, ownership is not just exogenous, but firm-specific attributes affect different investors' willingness to take stakes.

2.1.4 Ownership flexibility and influence

Barber & Goold (2007) use a matrix for classifying ownership of business units by the degrees to hold and influence. Traditional idea of a business is a specialized industry focusing on the core production. Such companies "buy to keep". Either they identify long-term prospects or valuable resources to utilize, integrate and build synergies between existing operations. The opposite logic of intentional holding is "buying to sell". PE funds are demonstrated as a typical form of such category. Such investors influence, but do not try to integrate businesses into any greater whole. The businesses need to remain stand-alone in order to become sold in the future. PE funds usually have a pre-determined life cycle, which restricts the most flexible use of assets.

	Invest	Invest and influence	Invest, influence and build synergies
Buy to sell	Limited opportunities for investment	Hedge funds, Private Equity	No opportunities for investment
Flexible ownership	Active mutual funds	Conglomerates, unexploited opportunities for public companies	
Buy to keep	Index funds, Public companies	Public companies	Public companies

Table 1. Ownership types (Barber & Goold 2007)

There is an intermediate form between "buying to sell" and "buying to keep" owners. This "flexible" owner type is not literally intermediate, but rather a rich combination of both two aforementioned types. Unlike investors that buy to sell, flexible ownership has no exit plan. It can be integrated or combined into another whole as well as remained independent like the targets of PE funds. Not all sectors of the matrix will be covered, since benefits come from complementary attributes. For example temporary ownership and long term integration would be an obvious mismatch.

Arguably, PE as a form of active ownership can be found from two sectors in the matrix. By definition, active ownership includes influence. Thus, bare "invest" column in the matrix will not meet the conditions. PE can be found from the matrix as a combination of "buy to sell" and "invest and influence" intentions. In addition to the original position set by the authors, similar buyouts can be conducted by conglomerates too. This requires that such diversified firms have a flexible ownership mentality instead of permanent one.

Despite the usefulness of the matrix to demonstrate and classify differences between owners, it simplifies buyouts. One should be cautious when ruling out the possibility to build synergies and integrate businesses in PE industry. Asset stripping has often been perceived as a typical activity of PE investors (e.g. Kester & Luehrman 1995; Barber & Goold 2007; Gilligan & Wright 2008, 53; Klein et al. 2013). Although, there is no reason to neglect the need for complementary investments involved in strategic redirection or operational improvements.

Mergers and acquisitions are potential means for combining a bundle of required resources. The question is merely that of business entity or unit of analysis. Focusing on actual business to be divested, matrix remains reasonable. For a PE investor of conglomerate to perform exit, businesses are more easily sold if they have high independence for core functions.

2.1.5 Buyout investors in practice

Typical form of private equity investor is a buyout fund, where capital comes off the balance sheet from limited partners (Wruck 2008, Kaplan & Strömberg 2009, Klein et al. 2013). Thus, the buyout firm with its managers will represent the general partner. Typically this kind of fund has a predefined life cycle. There is an inherent intention to sell target companies in order to release committed capital and perform an exit (Kaplan & Strömberg 2009). Thus, the temporary nature of ownership is inherent to PE funds. Managing general partner collects a fixed percentage of annual management fees and an additional performance-based fee called "carried interest", a portion of residual income.

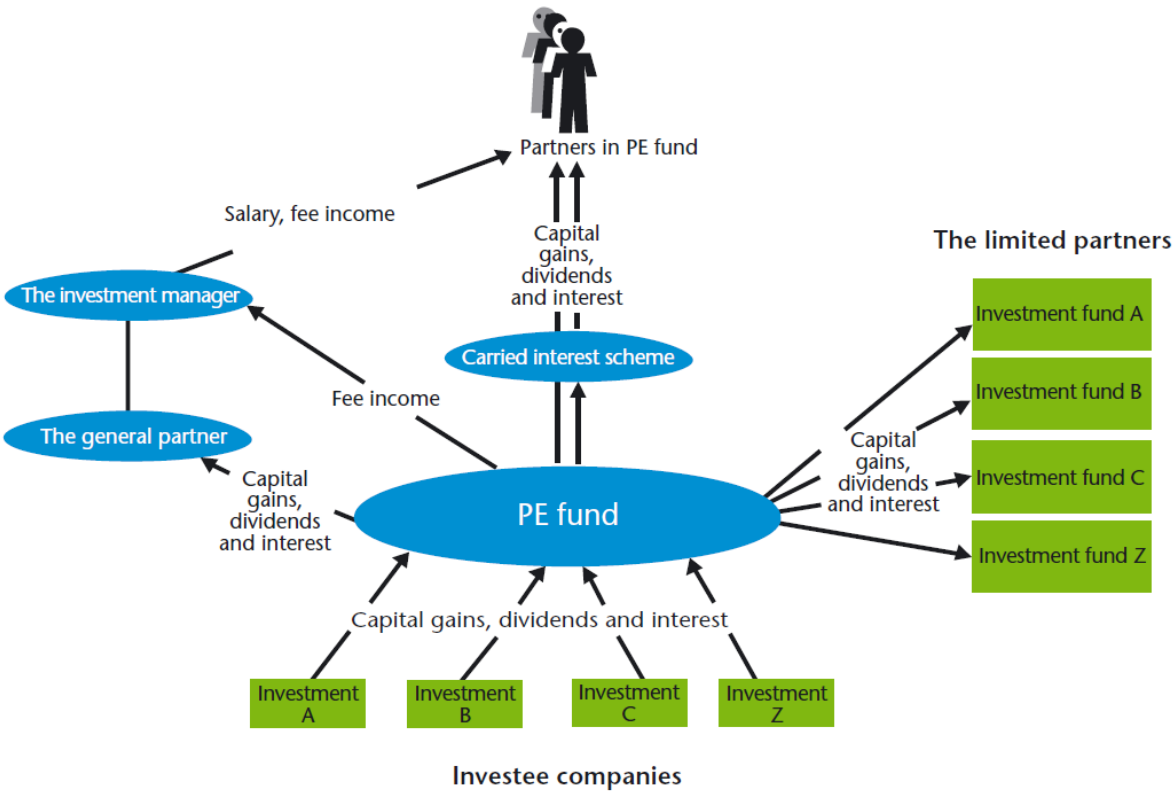

Figure 3. Structure of PE investments (Gilligan & Wright 2008, 18)

In Figure 3, Gilligan & Wright (2008, 18) describes the structure of a typical PE fund. The fund is primarily owned by the limited partners, who benefit from the residual income, capital

gains, dividends and interest after the PE fund has collected management fees and carried interest schemes.

In contrast, a diversified company or so called conglomerate has typically no predefined life cycle nor management fees. The performance of subsidiaries has a direct impact on the parent company, thus constituting a straightforward setting for corporate governance. Although, diversified companies tend to have more management layers in hierarchical structure, making flat private equity funds seem more like private conglomerates (Klein et al. 2013). If the PE firm as a general partner invests its own funds along with limited partners, then the PE fund slightly combines elements of conglomerate form. For example, if gathering funds from limited partners takes time, it might be reasonable for the PE firm to fund the sudden buyout opportunity temporarily with equity of the parent company. Thus, in theory it is not impossible for a PE firm to utilize elements of more flexible conglomerate form in a tactic way.

Private equity investors are usually temporary owners who have specialized in certain activities that create value. Such activities might be restructuring of organizational resources, financial arrangements and adoption of new management systems (Wruck 2008). Temporary ownership implies that PE investors have a comparative advantage in certain activities. As long as the active owners can contribute value creation through their advantage, they have incentives to hold the firm. Since owner activity is a scarce resource, capability of increasing value through ownership should be constantly examined based on the ideas of comparative advantage and also the opportunity cost of capital. Rather than becoming passive, active owner will eventually need to release the capital and realize the value increase through an exit. Following this cycle PE investor can focus on new opportunities based on one's own comparative advantage.

2.1.6 Buyout types

Buyouts can take different forms according to the capabilities and opportunities identified by the investor. To structure the variety, Wright et al. (2001a) suggest a matrix according to purpose and mindset. They constitute four different buyout types: efficiency, revitalization, entrepreneurial and failure buyouts. One important notion is that not all buyouts are necessarily focusing on control and the efficient use of resources, but innovation. Thus, the purpose is either "efficiency" or "revitalization". Efficiency means incremental, operational improvements in internal processes. Revitalization emphasizes orientation to external market forces, through changes in business logic. Innovation can be moderate or radical. It will be manifested in the mindset between managerial and entrepreneurial ones.

Purpose	Mindset: Managerial	Mindset: Entrepreneurial
Efficiency	**(1) Efficiency buyout** Low risk. Value increase by treating downside issues: agency problems and inefficiency. Emphasis on systematic data, financial criteria and utilization of leverage.	**(4) Failure buyout** Mismatch of mindset, incentives and governance: entrepreneurial mindset combined with efficiency-seeking management practices.
Revitalizing	**(2) Revitalization buyout** Moderate risk. Value increase by renewing competitive capabilities and exploiting existing success factors. Long-term incentives, managerial discretion and flexible leverage.	**(3) Entrepreneurial buyout** Venture capital. Value increase comes by fostering strategic innovation in flat and flexible organization. Long-term incentives and managerial discretion.

Table 2. Buyout types, simplified from Wright et al. (2001a)

Efficiency buyout in the first quadrant applies managerial mindset in order to improve efficiency. Opportunities for efficiency gains exist typically when owners and managers have misaligned incentives and control mechanisms. Typically, such problems are a result of little managerial ownership, substantial equity funding and little monitoring role or absence of institutional investors. Such factors easily allow managers to over-diversify and overinvest. Buyout provides means for improving incentive systems such as performance schemes or managerial equity. Managerial business leaders are likely to respond positively to monetary incentives. Buyout firms with their concentrated ownership stake often provide active oversight on target companies. High leverage typical for LBOs places pressure on managers to avoid bold and unrelated investment projects. (Wright et al. 2001a)

The second quadrant describes revitalization buyout. It has a moderately innovative purpose by incorporating managerial mindset. This type differs from efficiency buyout by emphasizing longer term incentives. Revitalization buyout may emerge when a firm lies in a weak competitive position and requires incremental upgrades or incremental innovation. Divisions of large integrated firms may face bureaucratic approaches that stifle initiatives and innovation resulting in underinvestments. When a division is peripheral to the parent's product line and core competencies, business unit may suffer from underinvestments. In order to perform successful revitalization buyouts, PE investors may need to acquire skills beyond their core financial monitoring skills. High leverage typical for efficiency buyouts may even constrain managers from engaging in innovations. Empowerment often involves responsibility in the form of managerial equity. (Wright et al. 2001a)

Entrepreneurial buyout in the third quadrant involves strategic innovations and identification of growth opportunities that require an entrepreneurial mindset. Such opportunities may exist in case of misaligned incentives and frustration resulting in "entrepreneurial release". Another buyout opportunity called "busted tech" exists when a technology-based business has run into problems. Whereas managerial buyouts focus on monitoring and minimization of downside, entrepreneurial release requires substantial emphasis on the upside potential. Managerial equity incentives and financial flexibility facilitate a longer-term view. Busted tech buyouts usually suffer from absence of governance mechanisms. Dominant entrepreneurial founders with their unique decision-making style may pose problems in advancing the business. An individual may have suitable skills at the early stages of the business, but not to its later development. PE investors may provide different decision orientation and managerial capabilities. (Wright et al. 2001a)

Failure buyout of the fourth quadrant is a mismatch of mindset and purpose. PE investors may apply control mechanisms that appear to be inappropriate. Entrepreneurial managers may become frustrated with control mechanisms. Managerial responsiveness to financial control systems may not be easily judged before the buyout has been conducted. (Wright et al. 2001a) This potential asymmetry of information between management and investors taking place before buyouts relates to the central research purpose of this thesis. The use of MCS might be realized and their concepts can be utilized even before closing a buyout deal.

2.1.7 Different approaches to PE

PE industry has gained attention and heated discussion among the public, as well as guided focus of the researchers to trace sources for value creation in buyouts. Generally, there exists a distinction between downside and upside approaches. PE investors' potential to create value has usually been linked to treatment of downside effects, such as agency issues. Efficiency gains or cost reductions can also be categorized as reduction of downside (e.g. Wright 2001b), following the logic that upside refers to growth in revenue or more strategic opportunity exploitation. It must be noted that the distinction may appear ambiguous and misleading to some extent. Efficiency gains or cost reductions may emerge from restructuring that involves creativity and alertness to opportunities. Same processes and capabilities may bring improvements in areas that are categorized both downside and upside. However, there have been conflicting views on the sources and justification of value creation in PE deals.

Active ownership of PE investors has diverse effects on companies and their various stakeholders. At this point, findings and interpretations remain diverse. PE firms play an essential role in leveraged buyouts where they have a tendency to reach out for majority control in firms with adequate maturity (Kaplan & Strömberg 2009). This typically results in changes in governance of the target companies. PE firms may develop corporate codes and reduce agency problems (Cumming et al. 2007). Moreover, monitoring of management is likely to be improved alongside with new compensation models and possibly highly leveraged capital structures (Kaplan & Strömberg 2009). Connelly et al. (2010) find leverage having a motivating effect on careful capital allocation. On the other hand, Klein et al. (2013) points that debt leverage decreases managerial discretion and "entrepreneurial" initiatives. Whereas PE investors have found to increase returns to shareholders, results have indicated reduced innovations as well (Cumming et al. 2007). Furthermore, Wruck (2008) suggests that leverage has only a secondary role when compared to the four of the successful principles behind PE: (1) small board of directors with significant equity ownership, (2) decentralized decision-making, (3) adoption of new performance measures that emphasize cash flow and long-run value, and (4) engineering of compensation system.

2.1.7.1 Downside approach and agency theory

Originally, sources of value creation in PE investments have emphasized superior treatment of downside issues. In early buyout literature Jensen (1989) emphasized agency perspectives so that he even made a prediction that publicly held corporations that typically suffer from conflict between owners and managers over cash flow, should become outdated. Typical benefit of LBO model is the flexibility of active ownership to align managerial incentives with the interests of owners. Managerial equity stakes and substantial use of leverage are classical examples of such control mechanisms. Even though publicly held corporations have not lost their substantial role after almost three decades since the prediction, the weight of aforementioned agency issues to explain value creation associated with PE investments remains significant in literature.

Downside explanations of value creation in PE buyouts and the growing significance of the industry have raised concern, if the short-term gains are generated at the expense of long-term profitability. Researchers have found some evidence behind these views. Hall (1990) suggests that PE firms have little incentive to favor long-term investment opportunities of buyout companies. PE firms have been accused of reducing contributions to innovations and

stakeholders, such as employees and even broader society. Skeptic views have been expressed, if PE investors really invest in management practices. However, the views stated in buyout literature are not parallel. Employees can as well benefit from secure jobs and possible increased employment resulting from more viable businesses improved by reduced agency costs and capabilities. Moreover, international evidence indicates about improved work practices, efforts to adapt into cultural context and realize the potential of human capital in buyouts. (Bacon et al. 2012.)

Findings of other researchers imply that claims of PE as short-termist and wealth-capturing appear radically simplifying the actual variety of the industry. Ughetto (2010) questions the common concern that buyouts would be simply associated with declines in innovation and R&D spending. Her results support the view that different types of investors with different objectives, policies and perspectives explain outcomes, for example leaning to the framework of buyout types of Wright et al. (2001a). Lerner et al. (2011) examine long-run investments of buyout companies and find them concentrating in important areas of innovative portfolios. The result implies that PE investors may apply strong strategic views on assets and capabilities, possibly with the use of control systems.

2.1.7.2 Upside approach and entrepreneurial nature of PE

There has been a strong tendency to expand PE research from downside emphasis of agency perspectives, cost reduction and financial engineering to upside growth and entrepreneurial aspects (Bruining & Verwaal 2005). It is suggested that buyouts can serve as a vehicle for strategic innovation and renewal that fosters upside growth opportunities. Buyouts provide a means to improve managerial and employee incentives and thus unlock resources that may have been blocked as a part of a large diversified organization or state-owned enterprise. Additionally, limitations of agency theory have been identified. Increased managerial ownership may cause entrenchment, increase managerial risk aversion and under-diversified portfolio for a manager, deviating managerial interests from those of owners. Agency theory is also limited in its power to comprehensively explain how incentives and monitoring should contribute to enhancing actual performance. (Wright et al. 2001b.)

Bruining & Verwaal (2005) find that successful buyout managers cannot be regarded thoroughly entrepreneurial, but they combine the pursuit of opportunities with exploitation and control of their resources. Bruining et al. (2013) find that majority PE-backed buyouts significantly increase entrepreneurial management practices, while simultaneously developing

administrative practices as well. Worth noting here is the chosen particular definition of "entrepreneurship". The authors applied Stevenson's conceptualization of entrepreneurial management (adapted from Brown et al. 2001), emphasizing opportunity-seeking and flexible, non-hierarchical qualities. Thus, it is not equivalent to any other concepts of actual entrepreneur as a character or entrepreneurship as a category of action discussed this far.

Rather than defining PE industry more "entrepreneurial", there have been attempts to construct a balanced view. Wruck (2008) discusses the market for corporate control and finds both PE and public ownership having own advantages against one another. PE firms are able to utilize effective governance and incentives. Publicly listed companies are able to bear risk due to diffuse ownership. They can also generate operational synergies. This is a benefit in riskier industries with significant economies of scale, requiring large, ongoing investments and infusions of equity. On the contrary, PE firms benefit from opposite circumstances: stable cash flows and modest investment requirements. Whereas PE investors typically perform radical changes in governance and management practices, performance suggests that public companies previously owned by PE investors do not completely revert to pre-buyout practices. Rather than remaining permanent owners, PE investors have a temporary reorganizing role for a limited time, bearing more resemblance to entrepreneurs than investment bankers or traders. This balanced role of PE has also been supported by Klein et al. (2013). Based on theoretical notions and empirical evidence that both support and oppose the view that PE would be unambiguously "entrepreneurial", they suggest that PE is better understood not as a financing method, but as a governance structure.

2.1.8 Summary of Private Equity

Whether it is academic or popular context, terms Private Equity (PE) and Venture Capital (VC) are not always used in a consistent manner. As justified in Private Equity part, I will apply the definition favored by recent academic literature. Thus, PE refers to more mature buyouts. Among different transaction types, PE industry has been associated to outside-driven leveraged buyouts (LBO). Private Equity is best understood as a form of active ownership, where owners put effort on influencing the firm. PE can be positioned between portfolio investors and industrial organizations by the notion that PE investors invest and influence, but do not generally build synergies. Buyout funds typically have pre-defined lifecycles making investing less flexible. Buyouts can also be conducted by diversified firms, conglomerates without such constraints. Four types of buyouts have been discussed: efficiency, revitalization,

entrepreneurial and failure. Effects of PE have raised concern and emerged a body of research, whose findings are not parallel. A trend in PE research to explain value creation from downside approach and agency theory has emerged to cover aspects of upside potential and entrepreneurial issues also. PE cannot be declared unambiguously entrepreneurial, but it is a form of governance that has potential for varying means of creating value.

2.2 Management Control Systems

> *"Human beings, viewed as behaving systems, are quite simple. The apparent complexity of our behavior over time is largely a reflection of the complexity of the environment in which we find ourselves."*
>
> Herbert Simon (Simon 1996, 110)

2.2.1 Introduction to MCS

Modern organizations of our time typically consist of employees working at different levels and on different tasks. This challenges senior management to ensure that actions are purposeful and performed within sufficient limits. Utilization of information and responsiveness are crucial in market competition. There is not only a challenge to measure and control certain aspects of business, but to align the whole organization with the competitive strategy in a consistent way. However, excessive control can easily constrain local level responsiveness and prevent strategic plan to remain sensitive to emerging initiatives. Management control systems (MCS) form an organizational framework for capturing this question of balance between empowerment and control, together with practical implications.

2.2.2 Definition and characteristics

Variety of definitions and concepts exist for MCS. Generally, some focus only on formal controls, whereas others expand their vision to cover informal systems also. Simons (1995, 5) defines MCS as "formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities". For Chenhall (2003), MCS include management accounting (MA) systems as "systematic use of MA to achieve some goal" and also "other controls such as personal and clan controls". Merchant & Van der Stede (2007) make a distinction between strategic and managerial control, an idea later utilized by Tessier & Otley (2012) in their conceptual development of Simons' (1995) seminal framework. Generally, MCS combine traditional ideals of control and stability with change, as well as enabling both short-term and long-term objectives (Simons 1995, Nixon & Burns 2005, Malmi & Brown 2008)

Notably, MCS terminology has not developed towards uniformity. Zimmermann (2001) divides decision-making and control. The former has a function of providing information to support decisions. Though, it is only the latter that directs employee behavior, referring to control. Flamholtz et al. (1985) see controls serving an important function of organizational goal congruence. Malmi & Brown (2008) suggest the use of MCS as a means to direct

employee behavior, thus making a distinction between organizational controls and organizational control systems. The latter may include controls not only directed at employees, such as quality and inventory controls. MCS appears to be yet more complex, when analytical constructions are being contrasted with empirical reality. Requiring behavioral control for MCS implies that an accounting information system may or as well may not serve as a control system. Its functions and effects determine, if it can be called a control system. Thus, such systems cannot be classified as MCS by default, but only after observing the way how they are being used. Consequently, identification of MCS requires empirical rigidity and extensive attention to organizational structures and practices.

Tessier & Otley (2012) identify ambiguity in the existing literature caused by failure to acknowledge difference between managerial intentions for controls and employee perceptions of them. The latter represents interpretations of the purpose of MCS by the employees who are taking it as given. According to the authors' perception, that is not a design attribute of the MCS. Although, even if these perceptions are not design attributes of MCS as such, they may play a crucial role in MCS design. Interaction and intertemporal learning process, for example, are likely to link these two aspects. However, aforementioned analytical distinction clarifies the way of identifying MCS practices in organizational environment.

Above mentioned differences make uniform MCS research non-comparable and complicated. Malmi & Brown (2008) have recalled for consistency in further MCS literature by examining differences. They have gone further to suggest an own conceptualization of a MCS package. Yet, different alternatives such as Levers of Control by Simons (1995) have continued to live on in recent papers. For example, Tessier & Otley (2012) have discussed weaknesses found in the concepts of Simons' (1995) framework. Rather than abandoning the whole framework and adopting some other pre-existing one, they improved definitions and suggested a revised framework.

2.2.2.1 MCS as a holistic package

There has been a general tendency for MCS researchers to understand MCS as a holistic package. The first widely recognized conceptualization, "contingency theory" dates back to Otley (1980). Since then, further development has embodied in the works of Simons (1995), Ferreira and Otley (2006), Merchant & Van der Stede (2007) and Malmi & Brown (2008). Arguably, one central element of realizing MCS as a package is contingency, originally conceptualized by Otley (1980). It means that there are contingent, context-specific variables

which the organization cannot influence directly. Examples of such are technology, organization structure and environment. Rather, they need to be taken into account when designing management practices. (Otley 1980.) Thus, there is a need to fit MCS package with contingent variables in order to achieve desired ends (Fisher, 1998; Chenhall, 2003).

Though, the only relation is not that between contingent variables and MCS, but those between the different systems within the MCS package (Fisher, 1998; Chenhall, 2003). Malmi & Brown (2008) second the idea that MCS do not operate in isolation. They concluded that the term "package" is important when demonstrating that different "systems" introduced by different interest groups do not holistically cover an entire system as a whole, but merely parts of the MCS package. Furthermore, the authors believe that treating MCS as a package contributes to identification of occasions where different control systems act as substitutes and complements in practice. (Ibid.)

2.2.3 Levers of Control

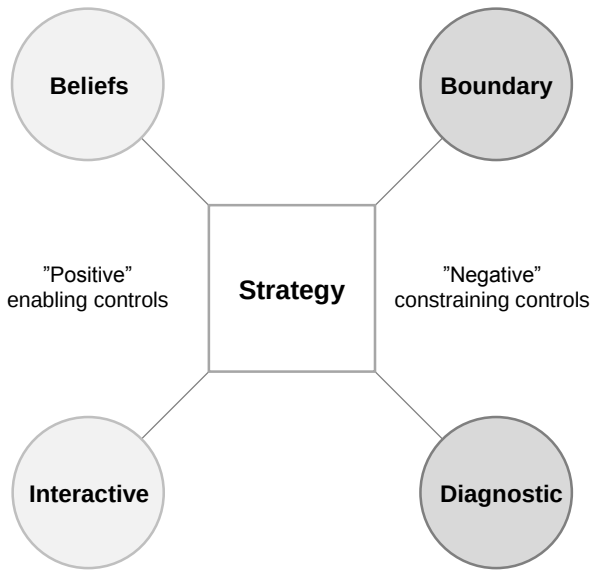

Figure 4. Levers of Control (Simons, 1995)

Four “levers of control” (LOC) of Simons (1995) form a frame for a notable body of contemporary research on MCS. Abstractly, the framework demonstrates a division of "positive" and "negative", enabling and constraining forces that constitute the MCS package. Beliefs systems articulate values, a positive direction for action and pursuit of opportunities. In other words, they draw the main idea of strategy in practice. These beliefs are constrained by

boundary systems that rule out things to be avoided. As a negative counterforce, they form the second lever that clarifies the picture of strategy. Diagnostic systems form the third lever. They are used to measure performance against pre-defined standards and thus serve as a feedback mechanism (of negative nature). On the opposite side, there is a positive lever for interactive systems. It has a purpose to enhance dialogue, information sharing and construction of organizational view of strategic uncertainties. (Ibid.)

The LOC framework introduces a general challenge of organizations to master both efficiency in ongoing operations and distinctive way of doing things. The latter refers to unique market position and innovative use of resources. Thus, there is a need to find a balance between top-down control and bottom-up learning. (Ibid, 21-25.) Three tensions have been identified in the framework to improve the big picture: (1) unlimited opportunity and limited attention, (2) intended and emergent strategy, and (3) self-interest and the desire to contribute. Simons (1995) brings up four general notions, how MCS can support to overcome this challenge. First, MCS can help to reduce the risk of temptation or pressure by defining, specifying and enforcing rules. Second, they can improve focus, direct resources and set targets to individuals that are facing the space of achievable opportunities. Third, they have potential to stimulate innovation, inspire and motivate. Fourth, MCS can reduce the fear of challenging the status quo. (Ibid, 28-29.) The four categories of control systems will be introduced more specifically below.

2.2.3.1 Beliefs and boundaries

Simons (1995, 41) concludes that beliefs systems and boundary systems transform unbounded opportunity space into a focused domain that organizational participants can be encouraged to exploit. The author defines a beliefs system as "the explicit set of organizational definitions that senior managers communicate formally and reinforce systematically to provide basic values, purpose and direction for the organization" (Ibid, 34). These definitions include basic values, purpose, direction and the view, how value is created. Furthermore, these systems define desired performance and manners of human relationships (Ibid, 178). For example, beliefs systems can be communicated through credos and mission statements. The primary purpose of a beliefs system is to inspire and guide organizational search and discovery, to determine relevant problems and guide the search of solutions. (Ibid, 33-36.)

The need for explicit beliefs systems arises from both internal and external complexity. Generally, increasing complexity makes it difficult for individuals to constantly realize organizational purpose and direction (Ibid, 36). Beliefs systems raise their importance when

opportunities expand, strategic direction changes or when workforce needs to be energized (Ibid, 178). When organization grows and gains established structure, defining and communicating common purpose becomes more difficult. That is especially the phase when having a clear purpose throughout the organization raises its importance. There is a need for a system that encourages and gives a direction where to search for opportunities. Environment of constant challenge and change require a balancing counterforce, strong basic values to provide organizational stability and focus. (Ibid, 36-37.)

Despite their formal nature and utilization of symbolic use of information, notable benefits of beliefs systems flow from emerging shared understanding. Ashford & Mael (1989) define three ways for managers to establish organizational values in a symbolic manner: (1) asserting uniqueness, (2) providing prestige to group membership, and (3) using formal beliefs as symbols of what the organization represents. However, significant benefit comes from discussion and understanding of the ideas behind beliefs. The LOC framework additionally recognizes that discussions around the beliefs systems have potential to increase the commitment of participants to organizational goals and mission. (Ibid, 36-37.)

Whereas beliefs systems motivate and guide opportunity seeking, boundary systems set essential limits on them. The LOC framework suggests that purposeful design of these constraints should be based on defined business risks. Boundary systems have three categories of sources: (1) legislation, (2) organizational beliefs, and (3) practices and codes of industry and professional associations. Furthermore, boundary systems emerge by learning, when organizations realize the types of behavior that must be discouraged. Other control systems can create performance pressures, which LOC framework suggests to be balanced by codes of conduct. Explicit boundaries can also be liberating for lower empowered managers to direct efforts on creating, rather than continuously judging appropriateness of own individual actions. (Ibid 39-47.)

Institutionalized myths are yet another factor influencing both beliefs and boundaries. Simons (1995, 38) refers to the work of Meyer & Rowan (1977) on how organizations incorporate practices and procedures defined by prevailing rationalized concepts institutionalized in surrounding society. Adoption of formal processes and structures like beliefs systems may be an important legitimating action, an attempt to signal managerial competence. The underlying idea of myths can be applied in the case of boundary systems also. Industry standards and

professional associations as a source of boundaries challenge organizations to imitate and adopt practices for external reasons, rather than purposes primarily related to internal organization.

As a whole, beliefs and boundary systems define a focused area from the large opportunity space. They are used to define both means and ends. As Simons (1995, 57) concludes, they are "the formal, information-based routines and procedures that managers use to maintain or alter patterns in organizational activities". The LOC framework identifies the need to reinforce beliefs and boundary systems continually. It suggests that two key variables, core values and business risks should be analyzed in order to realize how control systems can support business strategy. (Ibid 57-58.)

2.2.3.2 Diagnostic

Diagnostic control systems are used as feedback processes that measure critical performance variables against predefined standards. They are the formal information systems that managers use to monitor organizational outcomes and correct deviations from present standards of performance. These systems have implications for different organizational levels. Diagnostic systems enable subordinates to identify deviations and make individual decisions about correction. For senior management, these systems provide assurance that workforce performs within desired boundaries. Specifically, there are three factors that define diagnostic control systems: (1) measurability of outputs, (2) standards to be used in comparison, and (3) the ability to correct deviations from standards (Ibid, 59-60.) As a result, diagnostic control systems connect inputs, process, targets and outputs. Once targets are derived from strategy, process control becomes a strategic implementation tool (Ibid, 63).

Critical performance variables as the core of diagnostic systems have been derived from the strategy. By definition, they are factors that must be achieved or implemented successfully for the business to succeed. Thus, diagnostic systems are essentially an element of the intended (rather than emerging) strategy. (Ibid, 63.) Effectiveness to influence the probability of successfully meeting goals and efficiency provide the largest marginal gain over time are suggested to be the prime criteria for selection of diagnostic performance measures (Anthony 1988, 34). Furthermore, measures can be financial and non-financial. For example, "balanced scorecard", a diagnostic conceptualization by Kaplan & Norton (1992) consists of four measurement categories in causal order: (1) innovation and learning, (2) internal business organization, (3) customer surface, and (4) financial outcomes.

The benefit of diagnostic control systems come from conservation of limited management attention. "Management-by-exception" refers to the ideal that goals can be achieved without constant management oversight. Thus, despite diagnostic control systems represent control of intended strategy, they provide autonomy. Individuals remain accountable for their results while having also discretion over the means to achieve desired ends. The LOC framework suggests that senior managers should focus their attention to (1) setting and negotiating goals, (2) receiving updates and exception reports, and (3) following up on significant exceptions. Thus, goal setting is a task not to be delegated. Managing by exceptions means that managers use exception reports and discussions as their primary tools. Herewith, little attention is required unless a critical variable goes out of desired boundaries. (Simons 1995, 70-71)

One diagnostic system can serve multiple purposes. Profit planning, planning and allocation of resources can be linked to a single system. The framework recognizes motivational role of explicit targets. Motivational effects will be enhanced, when individual evaluation and rewards systems are based on diagnostic system. Furthermore, actions cannot be corrected consistently without benchmarks. However, it is worth noting that the nature (subjective or objective), completeness and ability of individual to influence measures determine, whether diagnostic control is purposeful or whether it leads to limited control or even dysfunctional behavior. (Ibid, 74-77)

In sum, diagnostic control systems support monitoring and achievement of strategically important goals stated in form of critical performance variables. These systems can improve empowerment and utilization of specific knowledge in the intended strategy implementation, while scarce managerial attention can be released or directed only when exceptional situations should occur.

2.2.3.3 Interactive

Interactive control systems focus attention and force dialogue throughout the organization in order to scan strategic uncertainties and emerging insights. Such systems have four characteristics in common: (1) information generated by the system is important according to the highest levels of management, (2) system demands frequent and regular attention from operating managers at all organizational levels, (3) generated data will be interpreted and discussed in face-to-face meetings consisting of superiors, subordinates and peers, and (4) system serves as an instrument for continual challenge and debate concerning data, assumptions and actions. (Ibid, 96-97)

While diagnostic control systems serve implementation of the intended strategy, interactive systems support bottom-up emergence of strategy. Diagnostic systems typically constrain innovation and opportunity-seeking by focusing on predictable goal achievement. In turn, interactive control systems induce double loop learning to find out, what are the critical things that business must do well to achieve strategic ends. Furthermore, it not only connects detected errors to strategies and assumptions, but evaluates the norms that define effective and desired performance. Diagnostic systems support sensitivity to identify external shocks that might appear problematic against the vision. Strategic uncertainties are changing continuously, and therefore cannot be pre-determined and monitored only on diagnostic management-by-exception basis. (Ibid, 91-106)

Definition of interactive systems in LOC has five conditions. First, system must require reforecasting of future based on revised current information. It must be understood, what has changed and why. Second, an interactive control system must be simple to understand in order to maximize participation. Third, such system must be used at multiple levels of organization. Fourth, it must trigger revised action plans. Benefits will be realized through action. Interaction must provide means how to adjust strategy for a beneficial way. Fifth, a system must collect and generate information that reflects the impact of strategic uncertainties on the strategy. (Ibid, 108-109)

2.2.4 Contemporary development of LOC

Conceptual development of MCS packages has not moved towards uniformity. Despite more recent frameworks (e.g. Malmi & Brown 2008), the earlier LOC framework has also been discussed and improved further. O'Grady et al. (2010) provide insights and suggest that research in MCS can be enhanced by developing the LOC framework. In a paper named "A conceptual development of Simons' Levers of Control framework" Tessier & Otley (2012) suggest a revised framework based on the LOC. Common for these two papers is the emphasis on organizational levels and division between operational and strategic aspects. In other words, four levers are not able to capture existing complexity, but they are favored as a basis.

2.2.4.1 Limitations of LOC

Efforts to realize organizational complexity beyond four levers have emerged in academic literature. O'Grady et al. (2010) demand four conditions to be met from an appropriate MCS: (1) representation of a complete system, (2) application of MCS to multiple organizational levels, (3) explicit consideration of the feedback and communication links between the system

components and organizational levels, and (4) encompassing mechanisms for change. Even though the importance of communication channels is recognized in the original LOC, the framework does not provide instructions how to design communication systems, or how the various systems should communicate with each other. (Ibid)

Explicit links between levers and organizational levels cannot be found from Simons' (1995) work. Adopting the viable system model (VSM) by Beer (1994), O'Grady et al. (2010) suggest that LOC framework should be enriched by including organizational levels and division between immediate vs. future environment. Generally, immediate environment falls under diagnostic systems, whereas future environment is primarily the concern of interactive systems. However, operational management with its diagnostic nature serves as a link, bringing immediately emerging issues to be discussed interactively. (Ibid.)

2.2.4.2 Revised framework

Tessier & Otley suggest a revised framework of Simons' (1995) conceptualization. They argue that original LOC definitions of positive and negative controls, enabling and constraining factors are very broad and general. They can be linked to a more general concept labelled the "dual role of controls". (Tessier & Otley 2012.) The concept refers to "competing roles that create dynamic tension in an organisation", basically those between empowerment and control (Mundy, 2010). Positive and negative controls of LOC are easily mixed with "good" and "bad" evaluation of the quality of control, effectiveness and efficiency. Although, only the dual role of controls is a design attribute of MCS, while the quality of control is not. Rather than using terms "positive" and "negative", explicit focus should be laid on dual, enabling and constraining roles of controls. However, positive and negative labels will be used to describe employee attitudes towards control. Thus, there is a distinction between managerial intentions according to MCS design, and employee perceptions of the system in practice. (Ibid.)

The revised framework distinguishes two main objectives of controls: performance (“do this”) and compliance (“do not do that”). They have been divided into strategic and operational levels. Consequently, the revised framework consists of four types of control systems: operational boundary, strategic boundary, operational performance and strategic performance systems. Originally, Simons suggests that performance should be rewarded, and non-compliance should be punished. Thus, plain compliance should not be a reason for extra reward. Empirical results do not support this generalization. As a result, the revised framework acknowledges that managers can decide whether to reward or punish for both performance and compliance. An

important notion is the separation of original interactive control systems category into strategic performance controls and interactive use of controls. Notably, diagnostic and interactive controls of LOC should be merely seen as ways of using controls rather than distinct systems as such. (Ibid.)

There is notable ambiguity concerning the original beliefs systems of LOC. For example, beliefs such as values can be used as boundaries. Notably, before Tessier & Otley (2012), Simons (1995, 42) already made this point when defining potential sources for boundary systems. Tessier & Otley (2012) suggest that the paradox can be explained by the notion that belief and boundary systems operate at different levels of analysis. Beliefs systems can control both performance and compliance, while boundary systems are mainly concerned with compliance. Boundaries can take social and technical forms, whereas beliefs are purely social. Belief systems play a role on all three levers of control. It is not an overall control system per se, but applicable to be used in different control systems. Consequently, the revised framework divides operational vs. strategic boundary and performance systems into social and technical types. Furthermore, the revised framework acknowledges the fact that a specific control can have more than one objective, performance and compliance. It can be used at different organizational levels, operational and strategic. (Ibid.)

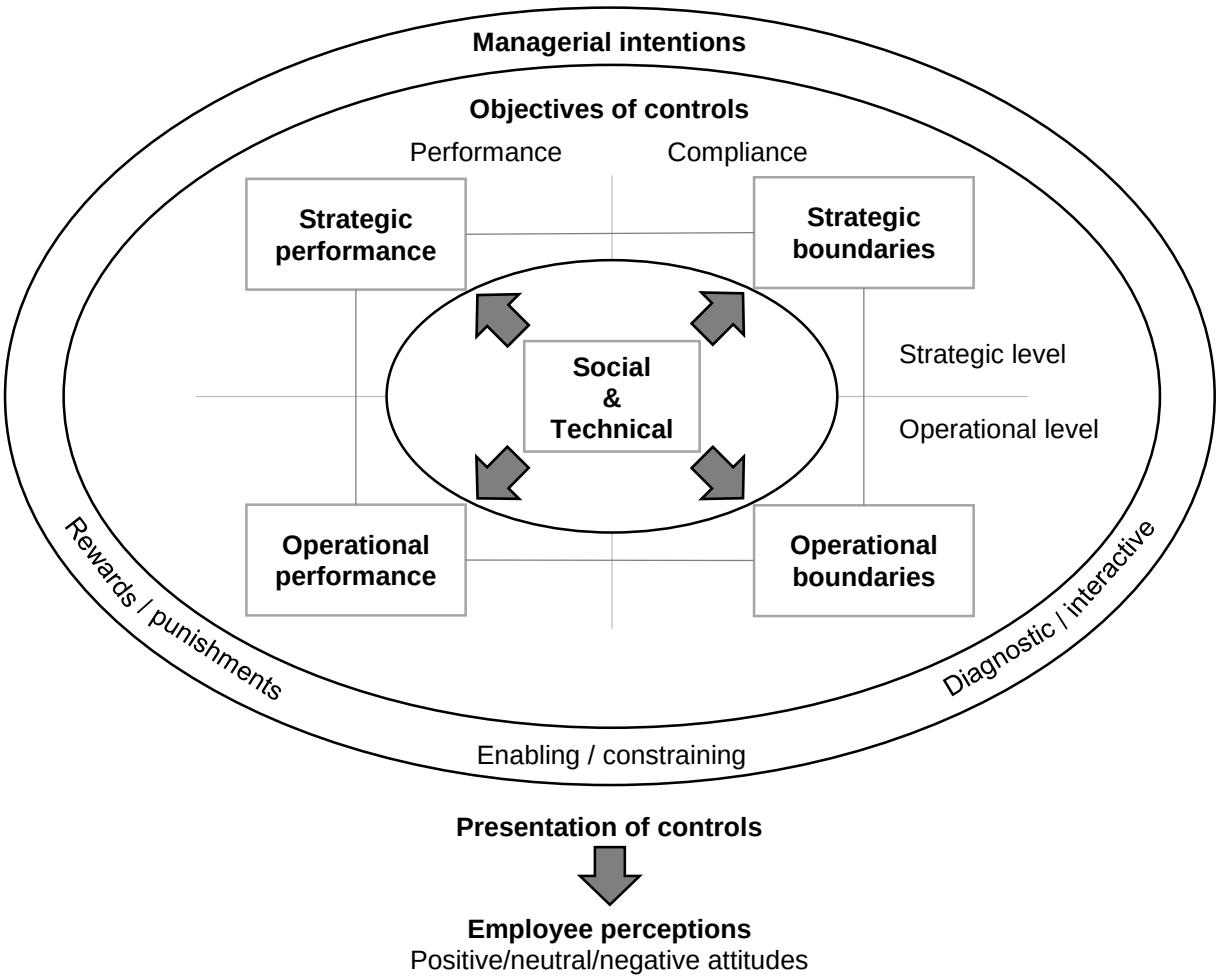

Figure 5. Revised framework of LOC (Tessier & Otley 2012)

2.2.5 Levers of control in boardroom

In their paper "The Levers of Control in the Boardroom" Crombie & Geekie (2010) expand the scope of original LOC to cover corporate governance. The authors analyze conceptually, how the use of accounting and control systems could be applied in directing CEO behavior. Briefly, beliefs and interactive control systems are seen to encourage pro-organizational behavior, whereas boundary and diagnostic systems are related to constraining opportunistic behavior. Consequently, assumptions of opportunistic or pro-organizational behavior lead to different MCS choices. Underlying theories of two opposite behavior models are presented: Agency theory (Fama & Jensen 1983) and stewardship theory (Donaldson 1990). Although, the authors recall that empirical evidence cannot prove clearly, if one theory has stronger explanatory

power over the other. It is also mentioned in the paper that such "straw person" conceptions are not realistic. The authors refer to Angwin et al. (2004) by noting that CEO behavior is not necessarily homogeneous, static and un-ambiguous. Thus, accounting and control systems need to be designed to account for the complex and dynamic behavior of CEOs.

The paper concludes corporate governance practices for each control lever. Conclusions for beliefs systems hold that board of directors should be involved in formulating core values for the organizations (Hitt et al. 2007). Furthermore, the board of directors should work with the CEO to formulate and communicate the organization's core values through the organization's beliefs systems. The board of directors should also work together with the CEO in order to realize, formulate and communicate organization's risks to be avoided through the boundary systems. Simultaneously the CEO will learn about actions that are not appropriate, thus constraining opportunistic tendencies. The board of directors should use the organization's interactive systems to increase participation, foster dialogue and debate with the CEO concerning strategic uncertainties and performance expectations. Diagnostic control systems allow managers to control operations remotely and focus their attention on strategic uncertainties. Board of directors should monitor and discuss critical performance variables. It enhances CEO accountability and constrains opportunism. (Crombie & Geekie 2010.)

Aforementioned conceptualization of LOC in boardroom implicitly supports the idea of operational and strategic layers of management, aligned with contemporary advances in MCS literature. Furthermore, it recognizes that CEO and the senior management team are not the ultimate sources of judgment concerning strategy and MCS. They are merely yet another intermediate agents under the board of directors, representing the owners. This larger scope and recognition of MCS layers becomes necessary in PE investments, where judgment of the higher order (owners) will be implemented through board work.

2.2.6 Earlier research on MCS in PE buyouts

Bruining et al. (2004) have a paper that employs LOC framework in a cross-case buyout comparison. The paper captures interaction between MCS practices, strategy formulation, implementation and modification. Findings conclude that buyout managers undertake efforts to stimulate upside (opportunity-seeking, learning behavior) and seek balance between traditional forms of action. Stronger ties between ownership and control appears to be a general benefit. Existing management accounting techniques are employed to communicate managerial philosophies. Beliefs systems will be more explicit tools to inspire employees. For

diagnostic systems, there appears to be overall improvements in management accounting procedures, implying efficiency and readiness for further stages in organizational development and potential exit. Diagnostics enable target setting, operational incentives and strategy implementation through critical performance variables. (Ibid, 2004.) Nisar (2009) examines the evolution of MCS in mature organizations with large restructuring programs, provided by leveraged buyouts. The results show that to facilitate decision-making and align owner-manager interests, buyout companies establish various control mechanisms, including input, behavior and output controls. Evidence shows links between output controls and cost leadership, while behavior controls are found common among companies emphasizing differentiation strategy. Furthermore, board members of buyout sponsors are found to have a crucial role.

2.2.7 Conclusion of MCS

LOC of Simons (1995) will be preferred to the case study applied with certain contributions from the revised framework suggested by Tessier & Otley (2012). The reason for choosing these over MCS as a package by Malmi & Brown (2008) relates to research-specific issues emerging from the case setting and topic. Case setting involving hierarchical entities requires understanding of controls at different stages from strategy to operations. Common for both frameworks, LOC (including previous revised framework) and MCS as a package is the role of MCS to align behavior with the strategy. MCS as a package divides and covers more aspects of control and covers details of organizational setting. Although, single paper cannot provide as explicit criteria and conditions than the whole book of Simons (1995). Both original frameworks lack sufficient incorporation of organizational layers and distinction between strategic and operational controls. However, LOC has already been developed further in this sense. The research topic is not established one. Arguably, LOC being clear with distinction between enabling and constraining controls, four levers is a simple frame to apply when approaching relatively new types of research settings.

2.3 Entrepreneurship and Organizations

> *"All judgments of value are personal and subjective. There are no judgments of value other than those asserting I prefer, I like better, I wish."*
>
> Ludwig von Mises (Mises 1957, 15)

In order to understand PE buyouts and MCS in their context, fundamental and contemporary topics of organization science will be incorporated into the framework. PE buyouts imply changes in ownership. As discussed earlier concerning existing PE literature, active ownership typically influences management practices. MCS are not only separate practices of operating managers. Thus, entrepreneurial views and capabilities of the owners are likely to influence strategy, its implementation practices and potential to emerge from lower levels. First, the topic of entrepreneurship as judgment will be discussed with two conceptual implications: (1) identification of original and secondary judgment of resource allocation, and (2) capital heterogeneity, referring to asset-specificity and subjective perception of asset value. Second, yet relating to asset-specificity, resource-based theory of MCS will be discussed, shifting emphasis on issues of capabilities and human capital. Third, the concept of dynamic capabilities will be introduced as a contemporary form of resource-based tradition. Fourth, microfoundations of strategy will be introduced with examples relevant to MCS. Finally, transaction cost theory of MCS will be introduced to build links between asset specificity and MCS more robust.

2.3.1 Entrepreneurship as judgment

Entrepreneurial theory of firm supports understanding of ownership and particularly its active forms, such as PE industry. Foss & Klein (2012, 78) present a concept of entrepreneurial judgment as a link between entrepreneurship and the economic theory of the firm. The authors define entrepreneurship by referring to economic concepts and discussions of the last century. Judgment will be defined as "residual, controlling decision-making about resources deployed to achieve some objectives; it is manifest in the actions of individual entrepreneurs; and it cannot be bought and sold on the market, such that its exercise requires the entrepreneur to own and control a firm". Entrepreneurs identify chances, imagine opportunities and finally decide on which resources need to be assembled, and how they should be combined in order to exploit opportunities. As a result, entrepreneurship as resource allocation will necessarily

require recognition of ownership. In other words, judgment and finance are inextricably linked (Ibid, 237).

2.3.1.1 Original and derived judgment

More precisely, this owner-specific judgment described above refers to the "original" or "ultimate" form of judgment. Employees that hold decision authority are defined analytically as "proxy-entrepreneurs", exercising "delegated" or "derived judgment". (Ibid, 191.) The concept of judgment has been apparent already in the work of Knight (1921), who argued that corporate governance is a nested hierarchy of judgment. Furthermore, Rothbard (1962, 538) stated that "It is the owners who make the decisions concerning how much capital to invest and in what particular processes. And particularly, it is the owners who must choose the managers." However, ultimate decision does not imply that owners supply the complete content of entrepreneurial plans (Foss & Klein 2012, 195). Fama & Jensen (1983) propose that owners practice "decision control" by delegating "decision management" to non-owners.

A key characteristic of entrepreneurial judgment significant is its subjective treatment of ownership. Individuals will reach different decisions, even if they share the same objectives and data, because access to different information and ways to interpret data tend to be subjective (Lachmann 1977, Casson & Wadeson 2007). The concept of uncertainty by Knight (1921) is a central element in entrepreneurial judgment. Not only is the specific outcome uncertain, but the whole probability distribution and range of outcomes. Thus, Foss & Klein (2012, 81) emphasize the importance of understanding profit not as an automatic rate of return on invested capital, but as a reward from successful bearing of uninsurable risks.

When applied to investing, judgment approach differs radically from the mechanistic theories that apply mathematical risk variables. Once risk is being homogenized into idiosyncratic betas and individual risk levels, investing becomes a mere calculus problem (e.g. Sharpe 1964). On the contrary, entrepreneurial judgment stands for resource allocation under uncertainty (Ibid, 79). The reason why investments take place is not just a question of having access to superior information and having measurably suitable risk aversion. There are no purely objective opportunities to be found and exploited, but individuals merely imagine them and act in order to achieve desired results.

2.3.1.2 Heterogeneity of capital

The idea of heterogeneous nature of capital has been supported by resource-based approach to firm and also Austrian school of economics. Contrary to homogenized, quantitative measure of capital, heterogeneity means asset-specificity and limited substitution in capital goods. Views on the sources of capital heterogeneity have slight differences. Kirzner (1966) suggests that assets are not heterogeneous by objective features, but by the role in specific entrepreneurial plans. Foss & Klein (2012, 117) base their idea of capital heterogeneity on the subjectively valued attributes of assets. As a result, "an entrepreneur may acquire ownership over assets because he thinks they are more valuable in combination with other assets, including his own judgment" (Foss & Klein 2012, 236).

Capital heterogeneity has particular organizational implications. Complex capital structure serves as a barrier to competition. It is the entrepreneur who undertakes search in the space of possible capital combinations. Ownership rights are normally assigned to assets that include valued attributes and unknown attributes. Difficult measurability of attributes implies that owners need to experiment in order to realize and exploit them. Thus, experimenting with combinations and recombinations of capital foster learning about asset attributes. Due to the costliness of such activities, experimenting needs to be balanced or guided. Transaction costs should determine, which attributes will be subject to creation or discovery. (Foss & Klein 2012, 123-129.) Matsusaka (2001) suggests that learning emerges in mergers and acquisitions. Argote (1999) emphasizes importance between employees and managers.

To explain firms, one must move beyond the perfectly competitive model where contracts are incomplete and ownership brings benefits as the residual right. Heterogeneity behind the factors of production have been incorporated into knowledge-, and capabilities based theories of firm. Different capabilities of entrepreneurs lead to different resource combinations. Presented approach of entrepreneurship as delegation of judgment under uncertainty together with imagined opportunities helps to explain boundaries and internal organizations of the firm. It contributes the existing theories of firm (e.g. Coase 1937; Williamson 1975, 1981; Tirole 1986; Simon 1951) by drawing advanced implications from concepts of uncertainty and subjective value, whose traditions date back to the works of Knight (1921) and also Austrian School economists (e.g. Menger 1871; Mises 1949). The entrepreneur has to start a firm to capture the returns to his judgment (Foss & Klein 2012, 166).

2.3.2 Resource-based theory of MCS

Henri (2005) applies resource-based perspective in MCS context. A study on diagnostic and interactive systems of LOC, namely performance measurement systems (PMS) includes four capabilities that are critical to strategic choices: market orientation, entrepreneurship, innovativeness and organizational learning. The author raises a point that Simons (1995) does not make an explicit distinction between innovation and organizational learning, for example. LOC framework will not explain comprehensively, why organizations combine diagnostic and interactive controls. Therefore, it is suggested that balanced use of PMS emerges dynamic tension, which contributes to aforementioned capabilities in a context defined by external uncertainty and organizational flexibility. Thus, dynamic tension contributes to organizational performance. The paper provides insights into the dual roles of MCS as a tool for both strategy implementation and formulation, present in Simons' (1995) LOC framework. Resource-based view of MCS moves the analysis from the strategic-choice level to capabilities level, providing links between MCS and capabilities. (Henri 2005)

According to the resource-based view, information and control systems are generally not a source of competitive advantage. They encourage firms to realize the benefits of the resources they control. Although, such realization cannot generate sustainable rents. Furthermore, systems can be readily transferred. (Barney et al. 2001.) Worth noting is that the author is not explicitly referring to MCS nor related frameworks such as LOC. The view of information and control systems as not being able to generate sustainable competitive advantage can be understood, when control systems are taken as separate practices, not holistically as a package. The role of MCS as a resource or "capability" will be examined further in this part and in synthesis section also.

2.3.3 Dynamic capabilities

Whereas resource-based view discusses "capabilities", further academic contributions provide means to realize their hierarchy in relation to competitive advantage. Capabilities of the firm are among the highest interests of the owners. Teece (2007; 2012) makes a distinction between dynamic and ordinary capabilities of organizations. Dynamic capabilities enable business enterprises to create, deploy, and protect the intangible assets that support long-run business performance. Generally, capabilities are seen distinct from motivations, intentions and strategy. They arise in part from learning, existing resources and history of the organization. Ordinary capabilities have three categories: administration, operations and governance, and

they represent combinations of skilled personnel, facilities and equipment, processes and routines, and the administrative coordination. Respectively, dynamic capabilities represent higher order capabilities that govern organizational activities. They enable the firm to integrate, build and reconfigure internal and external resources. Three clusters are involved in dynamic capabilities: (1) identification of opportunities, (2) mobilization, and (3) continued renewal. A major distinction between ordinary and dynamic capabilities is that the latter cannot be bought from the market. However, dynamic capabilities alone are unlikely to result in competitive advantage. They do not operate in isolation, but need to be coupled with other idiosyncratic resources and efficient strategizing. (Teece 2007; 2012)

2.3.3.1 Differences and similarities with MCS

Connections between dynamic capabilities and MCS are worth further analysis. Even if the firm was to enhance ordinary capabilities, they would still remain subject to and dependent on the dynamic, higher order capabilities. There exists a gap in the existing literature concerning explicit comparisons and connections between dynamic capabilities and MCS. Dynamic capabilities and MCS have not generally been applied together in research papers, nor has the framework of dynamic capabilities been recognizably present in PE research either. Dynamic capabilities go further in search of competitive advantage, yet remaining conceptually narrower than all resources and strategies needed in competition. Even though Barney et al. (2001) were not explicitly referring to MCS packages, they considered management practices as readily transferrable and not able to provide sustainable advantage. Thus, there are merely views that regard control practices fully separate from dynamic capabilities. However, overlapping aspects between MCS and dynamic capabilities can be found, making it relevant to examine interrelations of these concepts.

The crucial role of MCS in competitive advantage has been implicitly recognized in dynamic capabilities framework. According to the approach, in addition to spend on R&D, a company must generate and implement complementary organizational and managerial innovations (Teece 2007). This notion supports the view of MCS as overlapping set of practices or even as an inseparable part of dynamic capabilities. Arguably, contingent and suitable control practices can be managerial innovations. With a holistic package they have potential to become organization-specific innovations that support exploration and protection of competitive intangible assets as well as formulation of strategy.

Dynamic capabilities are related to an analytical framework as a tool of sensing opportunities and threats as well as comparing relevance and importance to organizational ends. Information concerning technologies, markets and competition needs to be acquired both inside and outside the enterprise. Additionally, information must be analyzed in order to figure out implications for action. (Teece 2007.) Existing MCS frameworks such as LOC may not fully replace concerns and implications presented in the dynamic capabilities literature. However, they can support aforementioned ends by directing attention and efforts in a clear and complementary way. They also provide an approach to increase understanding of organizational goals as well as foster interaction concerning risks and emerging issues.

Teece (2007) identifies sources for constraints of organizational behavior: regulators, standard-setting bodies and business ethics. They appear very similar to those stated by Simons (1995, 42): laws, organization's beliefs systems and shared industry codes. Teece (2007) points out that once a dominant design begins to emerge, strategic choices become limited: "The enterprise's articulated strategy can become a filter so that attention is not diverted to every opportunity and threat that "successful" search reveals." Thus, action and interaction may improve organization-specific understanding of employees, both clarifying goals and limiting alternatives. Even though interaction and strategic understanding may remain informally articulated, they may as well transform into formal structures, implying boundary and diagnostic systems. Interactive control systems may foster understanding that support formal beliefs systems. Additionally, this improved understanding can be interpreted as a social boundary system, a lever conceptualized by Tessier & Otley (2012) in their revised framework of LOC.

The focal challenge of balancing between control of ongoing operations (immediate success) and strategic alertness (creativity, future orientation) exists in both dynamic capabilities framework (Teece 2007) and MCS (e.g. Simons 1995). Discussing dynamic capabilities at a more detailed level, Teece demonstrates a mix of four categories that constitute strategic decision and execution skills in organizations: (1) designs that delineate customer solutions and the business model: e.g. technology and product architecture, customer targeting and value capturing mechanisms, (2) enterprise boundaries and "control" platforms that define e.g. asset specificity and co-specialization opportunities, (3) selection of decision-making protocols in order to identify complementarities and to avoid decision errors, (4) loyalty and commitment

that demonstrate leadership, communicate, define values, culture and non-economic factors. (Teece 2007)

Aforementioned categories that specify framework for dynamic capabilities can be interpreted against the MCS. First, designs that constitute business model and underlying economics, benefit from formal practices that can be defined as diagnostic systems. Second, enterprise boundaries and platforms that define asset-specificity and cooperation bear resemblance to diagnostic and interactive systems that are required to identify emergent strategic issues. Third, decision-making protocols that aim to recognize upside potential and risks bear resemblance to the idea of LOC to define boundaries by interaction about strategic uncertainties and identifiable risks. Fourth, establishing loyalty and commitment by example, communication and recognition of non-economic factors strongly resemble the idea of beliefs systems of LOC.

Organizational learning, incentive and process alignment are another things that make MCS relevant for dynamic capabilities. The approach suggests that rather than having skilled individuals, more desirable approach for an organization is to embed scanning, interpretative and creative processes inside the enterprise itself. Scanning, learning and challenging routines strongly imply interactive control systems of LOC. Furthermore, both MCS and dynamic capabilities approach recall practices for strategy implementation: "Business models implicate processes and incentives; their alignment with the physical technology is a much overlooked component of strategic management". (Teece 2007.) Arguably, dynamic capabilities imply a MCS-like package of practices behind strategy implementation and its reformation.

2.3.3.2 Complementary insights

Dynamic capabilities have additional implications concerning investment decisions and MCS. At a general level, flexible structures are purposeful until the dominant design emerges for strategy or business model. R&D efforts and market experiments can introduce and test different variations of business models. Once a design has developed and becomes successful, more focus will be needed to exploit it. At that point, heavy investments become strategically more purposeful. (Teece 2007.) This view of dynamic capabilities and strategic management bears resemblance to real options. Investors may not always need to commit the whole projected capital at the beginning of a project, but they can invest into exploration and retention of already identified potential opportunities. Once new information accumulates, investors can decide, whether they want to proceed further and make more substantial investments.

Naturally, decision-making will be more efficient and dynamic with concentrated judgment, as in the case of active ownership of PE.

MCS packages can support flexibility and interaction in order to develop a business model or more comprehensive strategy. More control and "orchestration" of dynamic capabilities can be supported by MCS thereafter. As mentioned by Simons (1995, 116-117), there is a risk of applying too many interactive control systems simultaneously, and thus dispersing focus and strategic signals overall. Thus, managers in crisis companies typically use many interactive systems, but only for a short period of time, in order to find a way to change. Simons (1995, 158) notes that interactive control requires ongoing and intensive managerial involvement. In comparison, diagnostic and beliefs systems require less frequent interventions from senior management. These notions support the view that comprehensive use of MCS package belongs under dynamic capabilities. Thus, MCS package is not a static set. Practices are thoroughly linked with the strategy and decisions of judgment that cannot be bought as best practices from even the most professional labor markets.

2.3.3.3 Applications of dynamic capabilities and MCS in literature

Conceptual applications combining both dynamic capabilities and MCS packages are scarce. Notably, McCarthy & Gordon (2010) provide the only one explicit academic contribution to the interplay of dynamic capabilities and MCS. The authors argue that MCS are tools for leveraging organizational behaviors and such outcomes that are necessary for dynamic capabilities. Their particular focus lies on variations in environmental velocity and feedback of it. Different conditions in environment set requirements for the combination of belief, boundary, diagnostic, and interactive control systems. MCS direct how firms explore and exploit their varying assets. Rate and direction of change in demand, competition, technology and regulation define what Bourgeois & Eisenhardt (1988) term "Environmental velocity". McCarthy & Gordon (2010) recall that this velocity is a contingency factor that affects management control in terms of the decision-making processes and rules that firms use. Furthermore, the role of environmental characteristics or "rapidly changing environments" was already recognized in Teece et al.'s (1997) early work on dynamic capabilities. There are two types of feedback: "As-Is" and "To-Be". Whereas the former is normalizing, refining and modulating, the latter is searching and anticipatory in nature. These feedback types have MCS implications on three central processes: coordination of resources, learning and reconfiguration. (McCarthy & Gordon 2010.)

Velocity of environment defines the nature of to-be feedback, and, consequently, implications for MCS package. High-velocity environment generates to-be feedback that is frequent and short in duration, requiring MCS to support adjustment and focus on core activities. The authors suggest that boundary and diagnostic systems of LOC framework would support the end. On the contrary, to-be feedback of low-velocity environments is sporadic, degraded and long-term, setting requirements for MCS to emphasize purpose, search, learning and communication. Thus, emphasis on beliefs and interactive systems will be suggested. The role of as-is feedback is complementary. It provides performance information that brings the loop back to consideration of MCS practices. Thus, errors and deviations from strategic and operational goals become detectable after they occur. (McCarthy & Gordon 2010.) Distinction between "as-is" and "to-be" feedback provides yet another demonstration of the common ground of dynamic capabilities and MCS: there is a need to find a contingent balance between support for immediate ongoing operations and exploration of future opportunities.

2.3.3.4 Dynamic capabilities and heterogeneous capital

Firm-specific asset management differs substantially from that of pure financial management. As Teece (2007) puts it: "The nature of the portfolio balance needed inside the enterprise is different from the portfolio balance sought by pure financial investors. The economics of cospecialization are not the economics of covariance with which investors are familiar." Furthermore, cospecialization and irreversibilities increase the complexity of project- and enterprise-level investment decisions. The returns to particular cospecialized assets cannot generally be neatly apportioned or partitioned. (Teece 2007.) Although, there already exists a great body of capital budgeting literature dealing with firm-specific issues, recognizing strategic investments (e.g. Alkaraan & Northcott 2007; Carr et al. 2010)

Differences between financial and firm-specific investments point the relevance of realizing the heterogeneous nature of capital universally. Earlier introduced judgment approach provides one explanation. Whereas financial investors with relatively small stakes of equity may exercise entrepreneurial judgment, their means of identifying opportunities and combining resources still remain very limited. Active owners, on the other hand, may exercise this judgment and apply entrepreneurial plans more extensively. They can influence firm-specific mechanisms such as MCS. According to Wruck (2008), ability to carry larger risks will be a benefit of public corporations with dispersed ownership. Arguably, underlying nature of risk in that case tends to seem more homogeneous and calculable. When adopting judgment

approach and more subjectivist position, this advantage of public corporations with dispersed ownership may not be as clear. Depending on the amount of potential investors with specific subjective perceptions of investment opportunities, ability to carry risks can hold for concentrated private ownership as well. Even though Wruck (2008) did not discuss these specific issues, she mentioned that PE and public corporations are seemingly approaching each other what comes to advantages as owners.

2.3.4 Microfoundations of strategy

Microfoundations constitute one contemporary categorization of strategy research. Microfoundations and dynamic capabilities are often intertwined. For example, Teece (2007) refers to microfoundations in constructing dynamic capabilities, and Felin et al. (2015) demonstrate microfoundations as an umbrella term that covers dynamic capabilities. Central for the approach is its mission to unpack collective concepts and understand how individual-level factors impact organizations and lead to emergent processes through interaction. Organizational-level outcomes, performance and even relations between macro variables are thus mediated by micro actions and interactions. (e.g. Abell et al. 2008.) Theoretical basis of microfoundations covers transaction cost economics, routines, cognitive psychology and dynamic capabilities among numerous other specific subjects. Microfoundations are not a theory per se, but a movement and a way of thinking. (Felin et al. 2015.) Some notions from microfoundations movement will be discussed in order to strengthen the framework of this study and links between its concepts.

2.3.4.1 Goal-framing

Arguably, microfoundations bear resemblance to driver-based mindset behind management accounting and MCS generally. Especially related to management controls is the approach of Foss & Lindenberg (2013) to emphasize microfoundations of individual motivation and cognitions. Their notions about selective attention and memory are common factors behind MCS also (e.g. Simons 1995, 28). Furthermore, the authors focus on the impact of goals over members of organization and value creation. According to one microfoundations approach called goal-framing theory (Lindenberg 2008), a particular higher order goal can govern large sets of sub goals and thereby change individual or lower order preferences. Three goals are identified: (1) hedonic goal, which centralizes immediate easiness; (2) gain goal, which expresses the desire to improve, and (3) normative goal, which signifies the desire to act appropriately and serve the collective entity. In order to influence behavior, these goals need

to be activated by situational cues. Worth noting is that one goal does not completely deactivate others, but it pushes these other goals to the background. Rather than being fully active or inactive, all goals have different and changing weights. Goal frames have a tendency to spread in groups and hierarchies. Top management's changing strategic goals or transformational leadership may have behavioral consequences at lower levels of the organization. (Foss & Lindenberg 2013)

In light of sufficient rationality and economic incentive alignment, the gain goal frame would be the first-best solution. However, Foss & Lindenberg (2013) argue that the normative goal frame is associated with the highest levels of value creation through collaborative activities and joint production motivation. Due to the difficulty of establishing and maintaining a normative goal frame and joint production motivation, the additional economic surplus accumulates in the long run. Normative frame affects the tasks, intensity and coordination of the efforts that organizational members are willing to take. (Foss & Lindenberg 2013.) This frame is associated empirically to spontaneous sharing of knowledge (De Dreu et al. 2008). Furthermore, it implies reduced moral hazard and the need for costly control mechanisms (Podsakoff & MacKenzie 1997).

2.3.4.2 Microfoundations and MCS

Joint production motivation implies that individuals generate shared representations of actions and tasks in terms of joint goals, reducing the need for formal planning (Foss & Lindenberg 2013). Competitive advantage involves differential beliefs concerning resource value, and the ability to influence beliefs will be increasingly important in managing cooperation. One explanation is communication and perception of beliefs of others that help game theoretical players to move from inferior equilibrium to the optimal one. (Foss 2007.) Thus, beliefs systems will be relevant lever for beliefs management discussed above. Furthermore, since beliefs influence resource allocation, they will have common ground with delegation of entrepreneurial judgment.

Beliefs behind "joint production motivation" or "normative frame" demonstrate ambiguity behind polarized distinction between constraining and enabling, positive versus negative (Simons 1995), and agency versus stewardship (Crombie & Geekie 2010) settings. While reducing the need for formal planning and turning opportunism into normative orientation, beliefs systems of enabling nature can serve effectively as boundary systems without existence of formal boundaries. This conclusion is similar to that of Tessier & Otley (2012) discussed

earlier. Additionally, interactive systems of enabling nature may foster normative orientation and thus prevent opportunistic tendencies, which, according to Simons (1995) and Crombie & Geekie (2010) are seen as the tasks of constraining boundary and diagnostic systems.

2.3.5 Transaction cost theory of MCS

Speklé (2001) explains management control structure variety in a transaction cost economics (TCE) perspective, an approach established by antecedent scholars (e.g. Coase 1937; Williamson 1981). Three dimensions to transaction costs are stated: (1) asset specificity, (2) uncertainty and (3) frequency. Additionally, there are also two behavioral forces behind transaction costs: bounded rationality and opportunism. Combining these aspects and forces result in hypothetical situations to be dealt with MCS practices. For example, uncertainty and bounded rationality determine, when and why the need to adapt is likely to arise. Asset specificity and opportunism explain when and why achievement of successful adaptation cannot be taken for granted. In turn, uncertainty and opportunism introduce information asymmetry and incompleteness of information. Assuming uncertainty leads to impossibility of complete contracts. Learning about desirable properties occurs during the contract execution. Thus, there emerges a need to realign contracts and execution with emerging insights. These notions bear resemblance to organizational learning and interplay of boundary, diagnostic and interactive control systems. (Speklé 2001)

TCE defines three modes of governance: (1) markets, (2) hybrids and (3) internal hierarchies. Markets are defined by free competition, alternatives and low asset specificity. Hybrids emphasize long term contracts and transaction specific safeguards for compliance. In such case, assets specificity may be intermediate. Hierarchies are defined by authority and internal incentive monitoring. It is opposite of market-based competition. Depending on the measurability, there are action and result oriented controls. Action controls monitor behavior and compliance, whereas result orientation focuses more on target setting and outcomes. (Speklé 2001)

Managers are granted discretion, since goals are often underspecified. The organization cannot define specifically, what it expects from its employees. At most, vague terms can be used. For an organization to rely on the vague terms, two conditions must be met: (1) individual actors must understand how their actions fit with the organization's emergent strategy, and (2) the organization must have means to assess the quality of performance. (Speklé 2001.) Apparently, vague terms lead to increased role of subjective evaluation. Notions of suitable understanding

of employees and means of superior to employ subjective judgment provide the other side of the coin for Simons (1995, 77) who suggests that subjective evaluation may be motivating only if trust is high.

As a result, Spekle (2001) demonstrates a decision-tree type of table containing determinants leading to different control archetypes. For example, high ex ante programmability of contributions with low, moderate or high asset specificity ("idiosyncracy") would lead to market control, contractual/outcome control or codified target control respectively. Low ex ante programmability with high idiosyncracy would lead to exploratory or boundary control tendencies. (Speklé 2001.) "Ex ante programmability", "idiosyncracy" and "impactedness of information for post hoc performance assessment" are slightly similar to the attributes of diagnostic system evaluation tree already provided by Simons (1995, 77) that includes measure completeness and individual influence over measure.

Ex ante programmability and asset specificity are arguably congruent with the notions of entrepreneurial judgment and heterogeneous nature of capital. However, already mentioned limitations in the paper included the focus of an individual organization, instead of expanding the scope beyond traditional organizational limits (Speklé 2001). In this case, organizational focus additionally carves out the question between ownership and management, such as board work. In light of judgment approach, organizational goals imply a form of derived judgment.

2.3.6 Conclusion of entrepreneurship and organizational topics

Contemporary papers about dynamic capabilities and microfoundations of strategy are together compatible with judgment approach. Especially the nature of dynamic capabilities as non-tradable makes them entrepreneurial in the sense of original judgment. Referring to the idea of a balance sheet, whereas no markets for original judgment exists on the equity side, dynamic capabilities appear to be the non-tradable equivalent on the asset side. The use of MCS has significant potential to support organizations in their challenges pointed by judgment and capabilities literature.

Judgment approach focuses on the complementary capabilities related to ownership of assets. Furthermore, it expands understanding of valued attributes and exploration of non-valued attributes that constitute potential sources of value for owners. Dynamic capabilities generally focus on competitive advantage and orchestration, i.e. the ability to renew strategy. It approaches microfoundations of strategy by guiding sources for competitive advantage. Both

MCS and dynamic capabilities will not cover all questions concerning strategy. They are merely support functions. This applies roughly to judgment approach also. Even though original judgment is the ultimate decision behind strategy, its framework concentrates on organizational structures and practices.

2.4 Synthesis

This part comprises essential elements from previously introduced areas of research in order to support understanding of MCS in a PE context. Basic ideas and findings from PE and MCS research will be introduced. Additionally, substantial attention will be paid to specific topics concerning entrepreneurship, ownership and contemporary organization science, which have not been linked sufficiently to existing MCS and PE research. These theoretical concepts of aforementioned fields of research construct an exceptional framework for further research. It will demonstrate new potential of these concepts to match with real cases and to support further theory building. The following text parts discuss specific combinations of central concepts. They approach from the abstract level of PE and ownership to delegation of judgment and board work. Consequently, potential conceptual links between MCS, dynamic capabilities and different buyout types will be discussed. Finally, the framework and its implications will be summarized.

2.4.1 PE as a channel for original judgment

PE is best understood as an active form of governance. It expands the means and potential influence of the owners to apply entrepreneurial judgment better than in publicly traded companies. Recent trend in PE literature to expand explanations for value creation from agency theory and downside aspects to entrepreneurship and upside potential have demonstrated rather variety of PE industry than plain financial engineering and wealth-capturing. Leaning on balanced views (e.g. Klein et al. 2013), emphasized role of active investors may not always result in managerial discretion or innovative opportunity exploration, for example measured in R&D efforts. Although, such aspects do not comprehensively define entrepreneurship nor success. Based on entrepreneurial judgment approach (Foss & Klein 2012), it is the owner who imagines opportunities and makes ultimate decisions. Klein et al (2013) remind that "Sometimes the most entrepreneurial action is to stay the course rather than follow the herd toward the next trendy attempt at innovation (e.g., staying out of the dot-com bubble of the 1990s)". Referring to endogenous view of ownership (Connelly et al. 2010), firm-specific attributes affect investors' willingness to take stakes in companies. In active ownership typical for PE, firm-specific practices and assets become more available for the subjective opportunity-seeking and resource combinations of the investor.

Setting of a typical PE fund involving investors, fund managers and imagined opportunities can be interpreted through judgment approach. Naturally, investors who provide capital to be

employed, apply original judgment. At some degree the same applies to managers, if equity-incentives exist. Notable here is that sources of imagined opportunities and plans to be implemented through governance may not need to come only or even mainly from the main providers of capital. Judgment approach takes into account that the providers of capital may not be in the main responsibility of providing ideas. Foss & Klein (2012, 227-228) discuss this "sole-individual bias" and suggest that exploitation of opportunities can be a team or group activity. Such notions successfully capture the nature of a typical PE setting: investors apply original judgment when deciding on derived judgment, delegating resources and discretion to fund management. Once being a customer of a wealth management firm, conscious investment decision requires that investor approves entrepreneurial ideas behind it and delegates responsibility of entrepreneurial and managerial actions.

Nature of ownership defines aspects to judge. To start with a typical example, ownership of publicly traded companies in a diversified portfolio may be an outcome of purely original judgment, such as mathematical calculations based on key figures. Index investing and value investing (e.g. Barber & Goold 2007; Puttonen 2009) are defined by a long horizon, rather than strictly pre-defined life cycle. Capital allocation among public assets may also be a result of derived judgment, a choice of a fund manager or a team. In such cases track record, personality and more general investment philosophy may be the most critical features to be judged. On the other hand, decision to invest in PE target implies interaction with the wealth management firm representative or examination of information provided by the firm. Unlike public assets, PE ownership typically has a predefined ownership period. Thus, in the first place, original judgment will be involved to examine, if the general partner proposes a sound and acceptable plan to create value during a temporary ownership period. Though, an impressive plan is not viable to generate desired return for investor. Limited partner needs to be convinced that the general partner is able to implement proposed plans. Altogether, judgment approach helps to realize differences among asset classes, bringing potential managerial implications for both investors and other people employed by financial sector.

Applied to the context of PE investing, judgment approach implies that original judgment of the primary providers of capital, limited partners, will concern beliefs and boundary systems. Derived judgment and more extensive use of MCS will be delegated to general partners, the PE fund managers. Original judgment of limited partners implicitly includes trust and belief that interests are aligned and fund managers are able to implement plans within the boundaries.

This thesis examines how the PE fund managers as general partners employ MCS in strategy implementation and value creation.

2.4.2 Judgment of LOC in boardroom

LOC framework in boardroom expands the scope from a single organization to governance issues also. Crombie & Geekie (2010) focus on the use of MCS in governing the behavior of CEO. Rather than covering one-way role of MCS in strategy implementation, they suggest involving CEO in the design of control systems. Board of directors should work with the CEO to formulate and communicate the organization's core values. CEO should also be involved when strategic risks are being identified and communicated through boundary systems. Interactive systems should be used by the board of directors to foster dialogue and debate with the CEO concerning strategic uncertainties and performance expectations. Board of directors should also monitor and discuss critical performance variables of diagnostic systems.

Combining board work and MCS will be relevant from the view of judgment approach. Participatory interaction between CEO and the board of directors supports alignment of higher order judgment. Especially if notable owners exist among the board of directors, not only understanding of strategy, but formulation of MCS will be a clear matter of original judgment. Unlike typical MCS literature implicitly takes senior management as the highest authority, LOC in board work brings MCS issues closer to original judgment. CEO and the executive team are not the ultimate sources of judgment concerning strategy and MCS. This larger scope and recognition of MCS layers become necessary in PE investments, where judgment of the higher order (owners) will be implemented through board work.

Recognition of strategic and operational layers of MCS suggested by Tessier & Otley (2012) encourages more detailed research. This distinction directs focus on division of labor concerning formulation and enforcement of these control systems. Expanding scope from interactions between senior management and employees to cover also owners and board of directors has potential in exploring new clusters of accountabilities and patterns behind control system package formulation. These control layers are especially relevant in PE investing, where limited partners and general partners have aligned interests at abstract level, but where delegation and operational empowerment are issues to be managed more specifically between limited partners and target companies. Worth noting is that in PE setting, MCS practices can be used beyond organizational borders through board work.

2.4.3 Division of labor in MCS formulation

Following the original LOC framework, many causal and implicit channels are invisible in the static categorization of four levers. For example, operational diagnostic systems can serve as a basis for operational correction. It can also motivate and provide performance metrics for rewards and compensations in measurable conditions. Interactive systems that deal with strategic uncertainties require specially designed incentives. When desired outcomes cannot be defined in a measurable manner, incentives need to be based on contributions. Intrinsic motivation generating insights can be activated by values. In turn, insights on strategic uncertainties that emerge through interactive discussions will have an impact on boundary systems as well as diagnostics measuring performance and compliance from performance variables. By discussing contemporary insights from MCS and microfoundations literature, I have combined and contributed existing attempts to clarify complexity and build more robust understanding of MCS.

Normative frame of behavioral microfoundations should be viewed merely as a potential benefit achieved through the use of certain MCS such as interactive and beliefs systems. As discussed earlier, contribution-based incentives are suggested for interactive systems. Even though desirable contributions cannot be defined ex ante, sufficient relevance and alignment will be needed. As Tessier & Otley (2012) suggested, LOC framework should be extended to cover both strategic and operational levels, performance and compliance purposes that take social and technical forms. For example, beliefs are purely social, whereas boundaries are technical. If normative frame and similar behavior is to be encouraged with control systems, conflicts between strategic and operational layers of MCS may prevent desired alignment.

Presented transaction cost theory of MCS by Speklé (2001) suggests that in addition to programmability of contribution evaluation, asset-specificity should be taken into account when determining control systems. He defines specificity as opportunity losses. Specificity can be interpreted through judgment approach and capital heterogeneity. In discussion of strategic belief management, Foss (2007) suggests that competitive advantage involves differential beliefs concerning resource value. According to judgment approach, heterogeneity of capital raises from subjectively valued attributes (Foss & Klein 2012, 117). Furthermore, transaction cost economics does not address who should acquire whose assets, and who will be the entrepreneur with a business idea (Foss & Klein 2012, 177). Thus, judgment approach has potential to complement transaction cost theory of MCS. This point appears particularly

relevant in PE industry where control issues expand beyond limits of a single organization. Arguably, choice of control systems is not a question of objective costs, but subjectively valued attributes and perception of uncertainty.

2.4.4 Dynamic capabilities as a source of focus

Capabilities direct and explain efforts on MCS formulation. Resource-based view suggests links between MCS and capabilities (Henri 2005). Dynamic capabilities approach (Teece 2007; 2012) makes a distinction between ordinary and dynamic capabilities. The latter enable to create, deploy and protect intangible assets that support long-run business performance and competitiveness. Unlike ordinary capabilities, dynamic capabilities cannot be bought from the market or transferred like any best practices. It is suggested that alone they are unlikely to result in competitive advantage. Nevertheless, applied with judgment approach, they constitute a necessary part of the whole resource combination originally imagined or at least confirmed by the ones with the original judgment. With mandate to combine assets and design control practices according to higher order judgment, PE investors have a significant role in light of dynamic capabilities.

Framework of dynamic capabilities goes further in search of competitive advantage. Teece's (2007) categorization of activities that support strategic decision and execution skills includes more specific areas to apply management control on. For example, alignment of customer solutions and business model, considerations on enterprise boundaries, asset-specificity and opportunities of co-specialization, identification of complementarities and potential decision errors appear too specific for any discussed MCS conceptualizations. Arguably, dynamic capabilities approach focuses more on strategically important processes and microfoundations, whereas modern MCS literature is searching for a holistic package that more explicitly balances between empowerment and control, existing operations and emerging strategic insights. Despite their overlapping areas and similarities, MCS and dynamic capability frameworks have potential to complement each other by suggesting practical and strategically significant issues to focus on when designing a MCS package.

There already exists at least one explicit application of MCS and dynamic capabilities in the literature. Being sensitive to changes in environment, MCS are suggested to support processes of dynamic capabilities: resource coordination, learning and reconfiguration. McCarthy & Gordon (2010) suggest that high-velocity environment generating frequent and short feedback requires emphasis on boundary and diagnostic systems in order to focus on core activities,

whereas low-velocity environments with degraded and long-term feedback require learning and communication, implying beliefs and interactive systems.

2.4.5 MCS from buyout purpose

Different types of buyouts presented in a matrix by Wright et al. (2001a) demonstrate the idea of varying roles and mechanisms of PE investors to create value in buyouts. Combinations of purpose and mindset put different requirements for MCS in order to support value creation. Two types of buyouts, efficiency and revitalizing ones will be discussed further. Including managerial mindset, they appear more relevant in light of MCS and (later stage) PE than failure buyout or more radical (VC-type) entrepreneurial buyout. At the moment there exists a gap in the literature to realize variety of buyouts in light of MCS practices and other theoretical concepts discussed in the preceding literature review. In order to contribute to this research space, the following part includes hypothetical managerial implications to be examined in case research, and furthermore, preliminary basis for further conceptual development.

2.4.5.1 Efficiency buyout

Efficiency buyout is arguably the stereotype of a leveraged buyout. It combines managerial mindset and incremental efficiency improvements. Logic of value creation lies in the treatment of risk and agency problems with a proper design of incentives and monitoring. Debt decreases the required amount of committed equity and increases returns to investors. Furthermore, interest payments and debt paybacks limit managerial discretion, which can be seen as a partial solution to potential agency problems. Operational efficiency and cost control require financial criteria as well as data-based decision procedures.

Obviously this buyout type implies need to formulate or re-engineer control mechanisms associated with downside issues, equivalent to diagnostic and boundary systems of Simons' (1995) LOC framework. In efficiency buyout it is more likely that investors share the existing core strategy and its beliefs systems at least at a strategic level. When hierarchy of strategic and operational control layers (Tessier & Otley 2012) have been acknowledged and identified, their evaluation and potential correction may become an issue with all types of levers. For example, over-diversified portfolio of activities might not support implementation of the core strategy. Improved focus requires explicit and stricter boundary systems. Applying the idea of control layers, strategy can be supported with more specific operational performance (beliefs) systems also. However, beliefs and interactive systems may not be of the highest concern in efficiency buyout. Acceptance of existing core strategy or minimal reconfigurations in it would

imply that changes in boundary systems emphasized merely operational performance systems, rather than ones of the strategic layer.

Insights emerging from dynamic capabilities literature support the interpretation of emphasized diagnostic systems in efficiency buyout. Processes based on "as-is" feedback (McCarthy & Gordon 2010) match with incremental changes of efficiency buyout: exploitation, single loop learning and adaptation, as well as evolutionary asset reconfiguration. Diagnostic systems are needed to control moderate level of risks involved in the business. Exploitation means a state of high awareness concerning critical success factors and resources, which serves as a basis for performance measurement, incentives and other corrective actions.

Whereas thoroughly market-based equity incentives are suitable for long-term value creation, internal MCS can support immediate incremental results. Incentives can be based on cash flow measures or even non-financial data, provided by diagnostic systems. For incentives to work, managerial business leaders are assumed to respond positively to monetary incentives. Even though people and personalities would play more significant role in earlier and more entrepreneurial settings, PE manager can also improve target company by evaluating and aligning its personnel according to responsiveness to MCS.

Data-driven diagnostic systems provide basis for corrective actions in order to guide managers and employees without intervention from the highest levels of judgment. This does not mean, however, that interactive systems would not have any role. Arguably, desired practice for a PE investor in an efficiency buyout would be what Simons (1995, 70-71) calls "management-by-exception": interaction and particular attention of higher levels would only be initiated by unexpected occurrences detected from diagnostic figures. While efficiency buyouts are not motivated by strategic changes and uncertain operations, single-loop learning will be more typical and desired process.

Efficiency buyout would logically fit better into the portfolio of a PE fund with predefined and relatively short life cycle. Avoidance of radical changes in strategy and its implementation in an established corporate setting brings valuable benefits for PE fund investors. The buyout company is expected to be directed on the desired track of incremental improvements soon after the initial deal. These relatively minor changes are not implying substantial investments in specific assets, making target company appear more attractive in the eyes of later buyers also. Thus, risks are more controllable from the very start.

2.4.5.2 Revitalizing buyout

Revitalizing buyouts combine managerial mindset and more significant changes in business logic. Unlike in efficiency buyouts, value creation of revitalizing buyouts comes from upside issues. Existing strategy may not be taken as granted, but evaluated thoroughly. Thus, it is in this type of buyout where the whole variety of MCS, such as four levers of control have potential to support reinvention and implementation of strategy. Wright et al. (2001a) suggest that revitalizing buyouts take place when there exists established business and a bureaucratic organization, whose direction needs to be reinvented. Similarly, Simons (1995, 128) suggests that different levers of MCS would be established in different phases of organizational growth. Thus, all types of levers would be in use by the time when sufficient maturity has been reached. Comprehensive use of MCS can be seen as a way of turning maturity and decline into new growth through sensitivity to emerging strategy.

For an established organization, existing variety of MCS constitutes a challenge for new owners to implement desired change. Before defining new control systems, prevalent ones need to be acknowledged, and their appropriateness must be evaluated. Transition not only means a shift in practices towards the goal, but also decisions about what to change and where to start in the first place. Arguably, holistic framework of different control systems has potential to improve understanding of necessary changes and conceivable risks even before buyout. Particular relevance for this MCS approach in PE buyouts is that unlike in public stock exchange, PE investors have a chance to collect exclusive information about potential targets before closing a deal.

Since MCS implications of efficiency buyouts would focus on diagnostic and boundary systems, it would be straightforward to suggest focus on the opposite systems, interactive and beliefs in case of revitalizing buyouts. However, I would suggest that the use of control practices depends highly on the entrepreneurial plan of the PE investor. Active owner may have a completely different and completely planned strategy to be implemented with a strict control. Such change may require additional work on both beliefs and boundary systems starting from the strategic level. Plans may as well avoid pre-defining desired outcome and remain sensitive to emerging issues, which may not result in diagnostic systems, but call for interactive systems.

Arguably, dynamic capabilities framework supports the notion that the design of diagnostic and interactive systems will be more contingent in revitalizing buyouts. Processes utilizing "to-

be" information (McCarthy & Gordon 2010) support strategic renewal by emphasizing exploration, double-loop learning and even radical asset reconfigurations. In rapidly changing environments with fine-grained feedback, focus on core activities with the support of diagnostic and boundary systems would be suggested. In low-velocity environments with more longitudinal trends, beliefs and interaction would be suggested to support purpose, learning and communication. The role of as-is feedback would not be non-existent, but complementary in revitalizing buyouts. It provides performance information that brings the loop back to consideration of MCS practices. However, sensitivity to emerging strategic insights and experiments match better with the idea of revitalization than efficiency. Interrelations between market environment, strategy and organization imply the need to use MCS in a comprehensive and dynamic manner.

2.4.6 Summary

Elements of the framework will be positioned in the illustration below (Figure 6). The grey boxes stand for focal areas of research with references to conceptual literature. Whereas parts 2.1 and 2.2 have been dedicated to PE and MCS, both entrepreneurial judgment and dynamic capabilities have been presented under the part 2.3. Each white box between two grey ones demonstrate a known piece of literature utilizing them both. Notably, only a few examples were found. Lack of interconnecting literature demonstrates an exceptional research space.

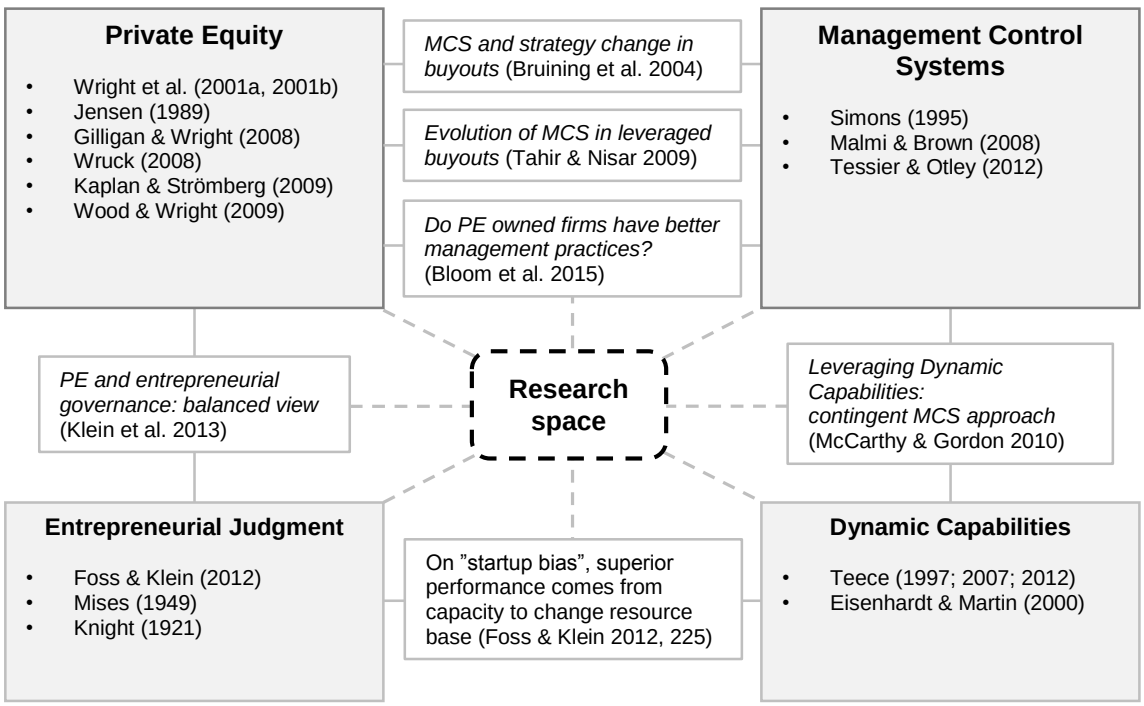

Figure 6. Illustration of the theoretical framework and research space

3 Method

The purpose of this research is to examine the use of MCS in an empirical case of a PE fund. More specifically, the focus will be laid on strategy implementation by the PE investors during their ownership period of the buyout targets. Additionally, notable for this research is sensitivity to factors of PE setting that potentially influence MCS beyond the boundaries of target companies. Despite the few existing studies on MCS in PE buyouts, preliminary literature does not provide sufficient examples of in-depth research with similar scope. This gap imposes the need to construct theoretical framework beyond existing PE and MCS literature to match with the exceptional empirical case. To examine the use of MCS in PE buyouts, and more specifically, to expand scope from single organization to wider setting of PE investing, the research will be conducted as a single case study applying systematic combining. The latter term refers to continuous iteration between empirical case and theoretical insights in order to improve accuracy of theoretical fit with empirical case. Thus, the method has been chosen primarily for the reason that it enables extensive attention to longitudinal and context-specific issues implied in the research question. The idea of systematic combining and the actual research process by using it will be explained comprehensively in its own part.

The unit of research is a single PE fund managed by an asset management company. Typically, PE funds consist of numerous idiosyncratic targets, which should provide multiple units of research. In this case, however, level of analysis will be the whole fund of interrelated units. Justification for this fund-level examination will be discussed below. Furthermore, the single case method and systematic combining can be supported by various notions emerging from case-specific issues, theoretical framework and preliminary methodological literature as well. These underlying notions will be introduced below as well.

3.1 Positioning the method

Bearing significant resemblance to systematic combining discussed above, understanding the position of the method can be improved by using other conventional concepts. Generally, Eisenhardt (1989) divides case studies as single case and multiple case studies. Related to the distinction, Vaivio (2008) discusses the dilemma of depth versus breadth. In this research, single case method has been chosen in order to conduct deep probing instead of comparisons across independent entities. Case studies enable embedded design, that is, multiple levels of analysis in a single case study (Yin 1984). Sensitivity for multiple level analysis will be

purposeful for two reasons. First, the research setting involves multiple organizational levels: parent company, limited and general partners of the PE fund, and target companies. Second, recent development in MCS discussed in the literature review suggests sensitivity to strategic and operational layers.

Purpose and especially relation of research with existing theories have served as a basis of categorization for many scholars. Scapens (1990) suggests descriptive, illustrative, experimental, exploratory and explanatory categories for case studies. Ferreira & Merchant (1992) introduce descriptive, theory building and hypotheses testing cases. Keating (1995) discusses theory discovery and theory refinement cases. The single case research of this thesis would not fall into only one clear category. Referring to the categorization of Scapens (1990), this thesis would combine descriptive, exploratory and explanatory features, as certain theories have been combined in order to explain a single case setting without managerial intentions. Thus, the case is not illustrative nor experimental. Due to the unique conceptual framework and case setting, this cannot be classified as hypothesis testing case of Ferreira & Merchant (1992). In addition to descriptive feature, there is also an apparent theory building side in this case. This thesis aims to combine concepts in a way that should illustrate their explanatory power. Thus, theory refinement case of Keating (1995) describes this purpose.

The strength of case studies can be found and exploited in areas where theory is not well developed (Dubois & Gadde 2002; Ryan et al. 2002, 149). Even though PE and management practices have already been studied at some degree, one could not define MCS and PE together as a well established object of research. In addition to the uniqueness of this particular research setting in this thesis, especially the theoretical applications of MCS together with dynamic capabilities, heterogeneous capital and judgment perspectives have not been developed either. Longitudinal case enables extensive theory building, where field setting and framework become interrelated. In case research, identifying patterns and developing theory are an emerging process, where iteration between theoretical insights and material happens by the researcher. (Eisenhardt 1989; Ahrens & Dent 1998.)

3.2 Case-specific issues

The PE fund under examination consists of several interrelated organizational entities, which results in a more complex research setting than regular industrial organizations as single portfolio targets. The original idea of the PE fund was explicitly that of creating a whole

business entity. Buyouts and strategic investment projects have spread over the life cycle of the fund. In order to understand this setting, intensive, longitudinal and retrospective single-case research will be more applicable than methods favored by researchers conducting studies on more entrenched settings, such as multiple case studies and surveys.

Presented theoretical framework demonstrates the notion that aforementioned setting includes additional complexities, or at least distinctive features compared to earlier MCS and PE research. For instance, literature strongly emphasizes the role of MCS package as a tool of senior management. In such studies, mergers or acquisitions are typically of very minor or nonexistent focus. Even in case of acquisitions, PE buyouts cannot be related to buyouts performed by established industrial organizations by default. As analyzed in the framework part, PE firms buy target companies in order to sell them within few years. Furthermore, the degree of independence in buyout companies will usually remain high. On the contrary, industrial organizations tend to perform buyouts in order to integrate critical assets and align them with a long-term strategy. Consequently, research implications derived from these distinctive features not only support longitudinal research method, but require broader scope and sensitivity in data collection.

3.3 Research space

Research space of this thesis will be defined by both the research question and the method. Even generally, PE buyouts and changes in management practices have not been studied extensively. Especially the concepts of MCS packages have been of minor interest among PE studies. Moreover, in the few studies on MCS packages and PE buyouts, the approach has been very overall. For example, Nisar (2009) applies quantitative methods, and Bruining et al. (2004) compare MCS practice changes in buyouts among two cases. Especially substantial number of samples in statistical analysis may help identifying tendencies at a very general level. Qualitative case studies have potential to improve understanding on changes and underlying organizational dynamics, such as conflicting demands and contradictory goals (Vaivio 2008). They shed more light on the variety of outcomes and enable to link them to contingent factors. Despite aforementioned potential, such studies have been of minor interest among combined research of PE and MCS. There exists a research gap for intensive, longitudinal single case studies that focus on the whole life cycle of a buyout setting.

Common for existing preliminary studies on MCS and PE is their focus on MCS as attributes of the target company (e.g. Bruining et al. 2004; Nisar 2009). Target companies or even particular management practices are being used as variables or units of analysis. Major limitation of this narrow approach is that it cannot recognize factors beyond target companies with influence on MCS. In reality, evaluation, planning and implementation of MCS practices in PE buyouts are not isolated from interaction between major owners, PE fund and buyout (target) companies nor their managers and board member positions. Choices of PE fund managers cannot be separated from the strategy and derived management practices of the parent company either. Thus, the research space of this thesis will be additionally defined by the focus on MCS in the contextual setting of PE. It will be enabled by the chosen single case method together with systematic combining.

3.4 Research as systematic combining

Process of conducting this research is close to what has been defined as "systematic combining" (Dubois & Gadde 2002). An earlier concept known as "abduction" can be found behind it. Abduction refers to investigation of relationship between language and concepts (Peirce, 1931; Kirkeby, 1994). Systematic combining differs from traditional linear approach by its non-linear, continuous back and forth integration of theory and empirical observations in order to match theory and reality. Constant matching of framework will occur during the research, when new insights arise from empirical world. Framework directs the search for empirical data. Additionally, these observations may result in identification of unanticipated related issues with potential implications for further research. Further exploration of empirical data may be redirected, and there may occur need to expand theoretical framework as well. Case studies provide unique opportunities to develop theory and utilize in-depth insights of empirical phenomena and their contexts. Conventional subsequent phases do not reflect the potential uses and advantages of case research. Abduction requires an integrated approach for the reason that various elements in such research work are interrelated. Complex structure of research setting makes systematic combining relevant method especially for single case studies. (Dubois & Gadde 2002.)

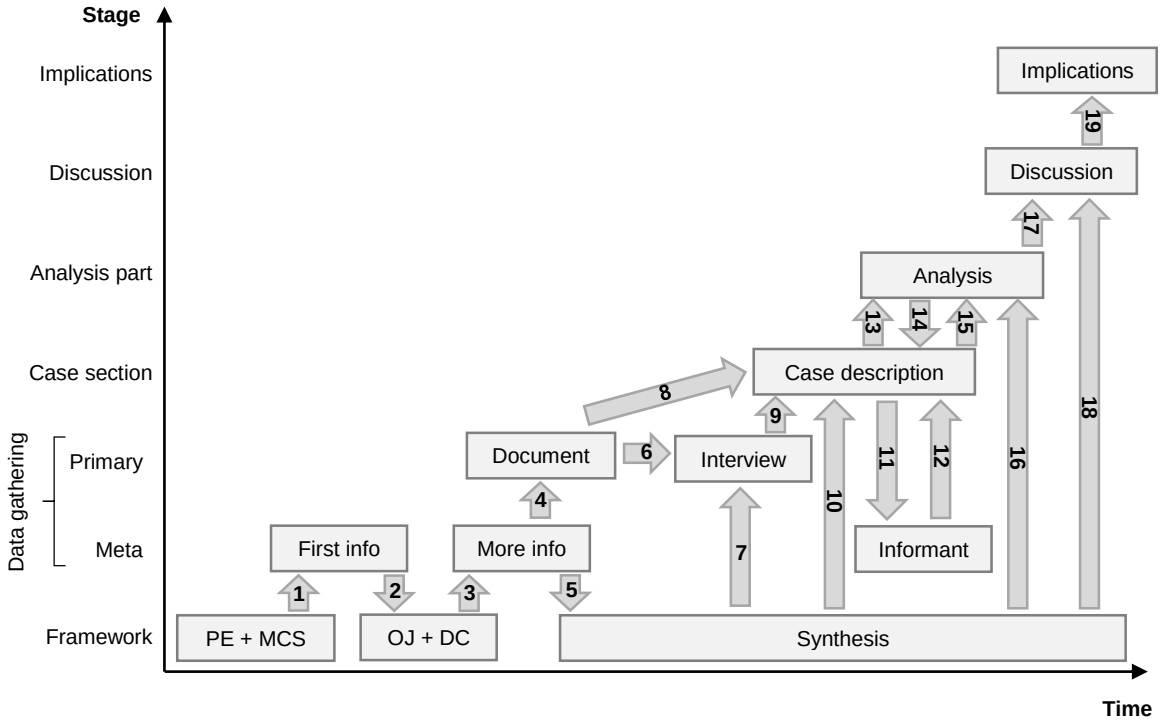

Figure 7. Research process by systematic combining

More specifically, fit of the method can be justified by revising the path how the research was carried further from the initial theoretical starting point. The study began from the theoretical curiosity to study PE case in light of MCS. At that point, the exact case was not known. The body of existing literature covering PE cases in light of MCS was scarce. Separate PE and MCS literature in addition to only a few papers combining them both provided the initial framework and direction that guided first approach towards the case (Figure 7, arrow 1). "First information" was informant information. It consisted of the organization structure, history of the parent organization and the particular PE fund to be studied. Furthermore, basic points of the investment philosophy of the company were stated as well. Words like "ownership" and "entrepreneurship" were used with substantial weight. Thus, there was a need to extend the framework to integrate ownership and entrepreneurship in order to understand MCS in the specific context (Figure 7, arrow 2).

Aligned with the ideal of systematic combining, Ahrens & Dent (1998) and Vaivio (2008) suggest sensitive approach to a priori theoretical orientation in order to maintain empirical sensitivity for emerging insights. Especially entrepreneurship was a term that required careful attention, since substantially varying definitions of the term were recognized from the literature. As a result, two additional theoretical traditions ("OJ + DC") were integrated into

the framework, improving both theoretical and empirical understanding of the case. First, judgment approach presented in the framework part defines entrepreneurship as ownership and resource allocation under uncertainty. Second substantially introduced concept was that of dynamic capabilities. It is relative to the older idea of heterogeneous capital and its captures the idea of resource orchestration in changing environment. Arguably, it relates to entrepreneurial management, having a position between judgment approach and MCS. Additionally, useful notions from neighboring literature, such as transaction cost economics and earlier resource based view were discussed in order to increase solidity of the parts in the framework. As Dubois & Gadde (2002) suggest, investing in theory might improve the explanatory power of case studies. After incorporating aforementioned elements into the framework, there were more robust means to approach more specific data and match existing concepts with the everyday language, as Peirce (1931) and Kirkeby (1994) have defined abduction. Additionally, Dubois & Gadde (2002) stress theory development instead of generating completely new ideas, as systematic combining builds more on refinement of existing theories. By putting effort on understanding and linking existing concepts, this research fits better with systematic combining.

As described being inherent for systematic combining (Dubois & Gadde 2002), enriched framework guided further informant data collection (Figure 7, arrow 3). This information provided details to construct comprehensive timeline of the Cleantech fund from capital call to exit mode. Informant data about the policies of the Asset management company, PE funds branch and the specific Cleantech fund were gathered during this time as well (Table 3). Nearly simultaneously, informant provided substantial body of the main data (Figure 7, arrow 4). It consisted of Power Point presentations about original investment plans from the early phases of the fund (Table 3). At the same time, framework was developed into synthesis (Figure 7, arrow 5). Writing synthesis part meant connecting and judging the usefulness of different concepts and their connections against the empirical context of the case. For example, the PE funds branch managing target companies raised a need to emphasize revised framework of LOC (Tessier & Otley 2012) in order to distinguish strategic and operational layers of control systems. Another example of case-specific matching between context and framework is the emphasized role of judgment perspective and heterogeneous capital. Despite their universal explanatory power, they are more obvious aspects in the setting of active ownership.

Type of source	Description
Informant document	Detailed summary of the fund and its history
Informant document	Organization chart, policy and list of accountabilities
Power Point presentation	Material for investors, early 2012
Power Point presentation	Strategic plans + buyout of the Technology company
Power Point presentation	Plans and valuations of different potential facilities
Spreadsheets	Valuation models of different facilities
Spreadsheets	Financial statements of different facilities
Emails	Archived correspondence related to facility projects
Websites	Finnish business news on facility projects
Websites	News on company websites on facility projects
Documents	Contracts related to target companies
Document	Cleantech fund policy

Table 3. Complementary data sources

Four persons were interviewed. These interviews have been specified in Table 4. They were selected by their focal role to strategy implementation in the Cleantech fund. Informant information and actual interviews reveal that other potential persons would not have such relevance for the research subject. Interview questions were drafted based on the preliminary framework part and cumulative information about the case setting (Figure 7, arrows 6 and 7; Table 3). The interview consisted of four different parts. First, each interviewee was asked briefly about the strategy in general: what it is, how it has been formulated, implemented, and is it possible to have strategic initiatives. Second, LOC framework was incorporated by asking questions concerning practices according to their nature (beliefs, boundaries, diagnostics and interaction systems). These questions reflected an existing case study on PE and MCS by Bruining et al. (2004). Thirdly, informant information and documents revealed that there had been different negotiations and attempts to close M&A deals along the fund history. Each case was briefly discussed with interviewees involved in them in order to enrich written valuable information for further analysis. Fourth, based on the documents gathered earlier, there were certain more operational activities in the fund that took place along the lifespan of the fund. Questions concerning accountabilities and roles of aforementioned levers in their implementation were asked.

Interviewee	Date	Duration
Investment director, PE funds branch	13.11.2015	1h 30min
Managing director, PE funds branch	17.11.2015	1h 30min
CEO, Asset company	16.12.2015	55min
CEO, Technology company	21.12.2015	1h 10min

Table 4. Interviews

Interviews and documents were the main source of data for the study. Earlier informant data, documents and theoretical frame that helped to structure the interviews served also as the basis for writing the case description (Figure 7, arrows 8 and 9). The structure of the case description has been influenced by framework. First, the fund and the PE setting will be introduced generally. Its strategy and background story reflect especially the framework of judgment approach. Second, the essential LOC will be described from the point of view of fund strategy implementation. Certain direct operational implications will be included as well. Third, activities of strategy implementation with higher operational relevance will be introduced. This division into strategic and operational levels reflects the revised framework of LOC discussed in the framework part. Finalizing the case description also involved checking certain facts from the case organization (Figure 7, arrows 11 and 12). Whereas the case description was structured in order to introduce history and reflect topics of the framework, the analysis part was more explicitly based on discussing theory through the case description (Figure 7, arrows 13 and 16). In few cases analysis part required information from the original data gathering that was not yet written into the case description. At these points, case description was extended in order to provide better ground for analysis part (Figure 7, arrows 14 and 15).

3.5 Framework supports single case method

The choice of a longitudinal and retrospective case research and systematic combining can be supported by essential notions emerging from preliminary literature on PE, MCS, dynamic capabilities and entrepreneurial judgment. The research setting that expands scope of MCS to cover a wider PE setting is exceptional. There is a lack of similar example studies, which imposes the need to develop framework of MCS and PE further to match the empirical setting. Even without expanding the scope, there no longitudinal and thorough single case studies on PE and MCS were found. By far, even case method has been applied with rather limited access to rich data (e.g. Bruining et al. 2004, Nisar 2009, Bloom et al. 2015).

Malmi & Brown (2008) remind that one should not assume existing MCS configurations and linkages to be somehow optimal. Similarly, Vaivio (2008) discusses the importance of qualitative research to reject the economist's notion of the organization as a black box and a foundation of the construction of market equilibrium. Consistent examination of the factors influencing development of MCS package over time is best conducted with single case study. Teece (2012) notes that "The study of managerial dynamic capabilities is challenging because they are often tied to complex corporate histories" and refers to Danneels (2011) who prefers in-depth qualitative research in the subject. Foss & Klein (2012, 118) emphasize the role of capital heterogeneity in entrepreneurial judgment: "In our terminology, capital assets are heterogeneous to the extent that they have different, and different levels of, valued attributes." As discussed in the literature review, capital heterogeneity refers to subjective judgment, where individuals identify, or more correctly, imagine opportunities and values in the first place.

Subjectivism demonstrates sensitivity of the interplay between the specific context and the individuals involved. Arguably, it bears slight resemblance to context-specificity and the idea of contingency (e.g. Otley 1980). Subjectivism as individual-specificity implies that there should not necessarily be any objective view of contingent variables. Views concerning optimality of organizational "variables" or "control package" would be related to subjectively valued attributes or perception of opportunities discussed above. Analysis of these processes requires rich examination and understanding of the wide setting: individuals, ideas, assets, and ownership. Processes, by definition, take place over time. Since the research question emphasizes context-specific understanding of practices, processes and their evolution, longitudinal single case research appears to provide the most suitable means.

3.6 Reliability and validity issues

In the case, there are several aspects to be taken into account in order to ensure sufficient reliability and validity. McKinnon (1988) discusses reliability and validity and these particular issues. Reliability defines the state, where the researcher can rely on the collected data. Validity is concerned with the issues, if the research contributes to the original purpose, understanding of the intended phenomenon. Furthermore, there are several threats that can alter focus from the original intended target and also impair independence of the data from the observational circumstances: (1) observer-caused effects, (2) observer bias, (3) data access limitations, and (4) complexities and limitations of the human mind. Observer-caused effects refer to situation

where the researcher deviates oneself from the natural setting, but ends up disturbing it by one's own presence. Observer bias means that such manners are applied by the observer which differ from consistent fashion. Unlike observer-caused effects, observer bias consists of researcher's selective perception and interpretation. There are three types of data access limitations. First, the researcher cannot observe, what has happened before, and what will happen after the particular observation. Second, research hosts may impose limits on access and mobility of information. Third, limitations may prevent the researcher from studying the complete phenomenon originally intended. Complexities and limitations of the human mind mean that any statements by subjects may not be taken at face value. The subject may consciously try to mislead, for example to sell more rational or acceptable image of oneself. On the other hand, purely honest subject may still be affected by human tendencies and fallibilities that prevent from giving the most truthful statements.

Practically there exists minimal observer-caused effects on the research setting for two reasons. First, data collection took place during a very short period of time, and second, during the interviews and other interactions with the case company, all operations under evaluation and examination had been conducted. Generally, there are some factors that might expose research to observer bias, but not significantly. I have been working for the case company that operates several PE funds. However, I have not been involved with any incentive schemes related to the case setting, and my regular tasks have not been related to the operations researched in this thesis.

There are several ways that have been aimed to ease data access limitations, complexities and limitations of the human mind. The primary sources of data in this research are interviews. The first interviews were held in November 2015, but the story of the PE fund dates back to the spring of 2011. As McKinnon (1988) noted, the researcher has reliable data only of the time of observation. Vaivio (2008) suggests that in order to overcome this data access limitation, interviews should be complemented with other data sources. Hence, different archived materials are being used. These materials include internal planning documentations, investor presentations and external news about the company. Not only can this material help to check facts about issues raised in interviews. Indirect or implicit aspects, such as the emphasis on certain issues in materials can be compared with the views of interviewees. In addition, the main role of triangulation in systematic combining is not that of verification. Rather, its

potential lies in enriching understanding of the case and discovering new dimensions of the research problem yet unknown to the researcher (Dubois & Gadde 2002).

However, research hosts have not imposed limits on access. All available data requested for research purposes has been given when asked. Privacy issues have been discussed in the case company. Worth clarifying is that certain pieces of information concerning exact names and sums are not available for reporting. Though, these limitations to report information do not compromise any relevant information needed to truthfully demonstrate the case in light of research questions. Complexities and limitations of the human mind that can be expected from interviews can be treated by triangulation with other material. Interviews contained a relatively extensive list of mostly open-ended questions. Limitations of human mind and time may at times result in poor answers. Therefore, interviewees have been informed with a briefing of the research, its purpose and abstract question topics. It has been reasonable for the interviewees to have time to recall the whole life cycle of the fund and structure facts concerning its development.

In addition to aforementioned reliability issues, limitations of verification and generalization are worth noting. Social science deals with abstracted concepts. Thus, no objective standards exist to be used against measurement and verification of concepts. The researcher must extract a sample from a universe of indicators and manifestations related to the concepts. Because of these two constraints, researchers in the social science can never attain perfect validity. (McKinnon 1988). Vaivio (2008) notes that qualitative research is not aiming at generalizations of a statistical nature. However, qualitative studies can arrive at theoretical generalizations (Lukka & Kasanen 1995). Furthermore, Dubois & Gadde (2002) note that there is not one single way of matching in conducting systematic combining. They remind that in deep probing case studies, theory generation and confirmation are inseparable. As the other side of the coin in this research, semi-structured and context specific interviews have poor replicability. Therefore, credibility of a theory needs to be evaluated by using other means. Pfeffer (1982) suggests judging theories according to their logical coherence. Eisenhardt (1989) recalls the need to provide the reader with suitable information in order to enable evaluating research procedure and outcomes. The essence of all research is learning, that is, the theoretical framework combined with the matching case (Dubois & Gadde 2002). Hence, substantial space in this thesis has been reserved for explaining and demonstrating the research path procedure.

4 Case and analysis

This research examines how PE investors used MCS in strategy implementation during ownership of buyout targets. Since the brief research question remains open to a set of different interpretations, it will be specified more clearly here. Notably, this examination expands scope from single target companies to a wider setting of PE investing, such as parent organizations of PE investors and their customers as major source of capital. Ownership period covers relevant life-cycle of the fund from the first perceived investment ideas through investments to exit-mode when assets were sold further. Worth noting is that the exit deal as the final point of the fund life cycle will be excluded from the analysis. The research focuses on the actual implementation of the PE fund strategy and controls into the portfolio companies. MCS of the parent investment organization as such are of minor interest, but sensitivity to them will be maintained to some extent. Since the fund strategy implementation begins with exploring and evaluating buyout targets, proper attention has been paid to these processes.

The following parts integrate case description with analysis. Aligned with the discussion in synthesis part of the framework, this case demonstrates a distinction between fund-level strategic control principles and more operational and activity-specific practices derived from it in target companies. Text parts have been structured as follows. First, basic information of the case setting will be given. Second, leaning on the insights of original judgment and other entrepreneurial topics of the framework part, the case description will continue from the subjects such as imagined business opportunities, ownership, strategy and general control principles derived from them. Third, explicit control elements of the fund and their implications in target companies will be sorted into categories of LOC. Fourth, there have been several focal activities and processes closer to operational level, that have required more task-specific guidance and control. They will be introduced as activity-specific topics. Worth noting is that not all of these MCS findings can be classified solely as operational controls. However, some even being closer to strategic level, they have been found indirectly. In order to understand factors that influence aspects and the use of MCS package at different phases, accountabilities of activities and links between strategic and task-specific controls will be examined as well.

4.1 Introduction of the case company

The object of study is a single PE fund, named here as "Cleantech fund". It was managed by a PE fund branch of a larger Finnish asset management company, named here as "Asset management company", which is a publicly listed company. The role of the PE funds branch was that of providing unique and appealing investment opportunities for asset diversification. Altogether, 34 million euros were invested in the Cleantech fund by the customers of the Asset management company. The fund consisted of five biogas facilities, which were operated by the "Asset company". These facilities were built by the "Technology company", which was also owned by the Cleantech fund. Figure 8 below demonstrates the final composition of the Cleantech fund and its relations to investors and the Asset management company.

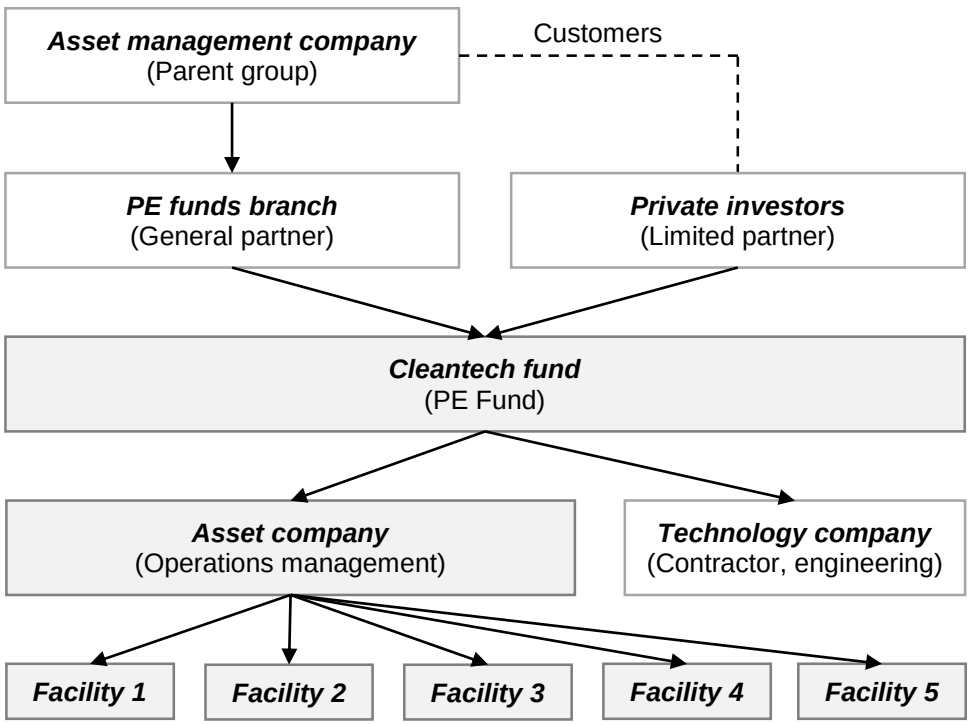

Figure 8. Structure of the PE setting

The Cleantech fund was a limited partnership with a legally valid board of directors. Although, there was a formally limited liability company "The management company of the Cleantech fund" founded alongside the fund in order to serve the actual function of the board of directors. More briefly, it was called "Advisory team" among the people who worked with the Cleantech fund. According to the organization code, all central decisions were to be made in the meetings of this team. Investments were to be stated, acquisitions and exits were to be decided, and the

strategy were to be clarified. The team consisted of the CEO of the Asset management company, the managing director of the PE funds branch, the investment director and two external specialists. The investment director and the CEOs of the target companies had a duty to report to the meetings of the team, which were held several times per year.

Exit for the fund was carried out during the spring of 2016. The core business of the fund was bought by an established industrial organization. More specifically, the Asset company with its management and facilities were included in the deal, but the share of the Technology company was excluded. It is worth noting in this research that the exit process itself will not be examined. Empirical data was gathered just before the fund lifespan came to its end. Therefore, it is nevertheless realistic to assume that the changes analyzed in this research will capture the use of MCS that affected exit value the most. Figure 9 below will illustrate the simplified lifespan of the Cleantech fund from imagined opportunity, "Idea" to "Exit".

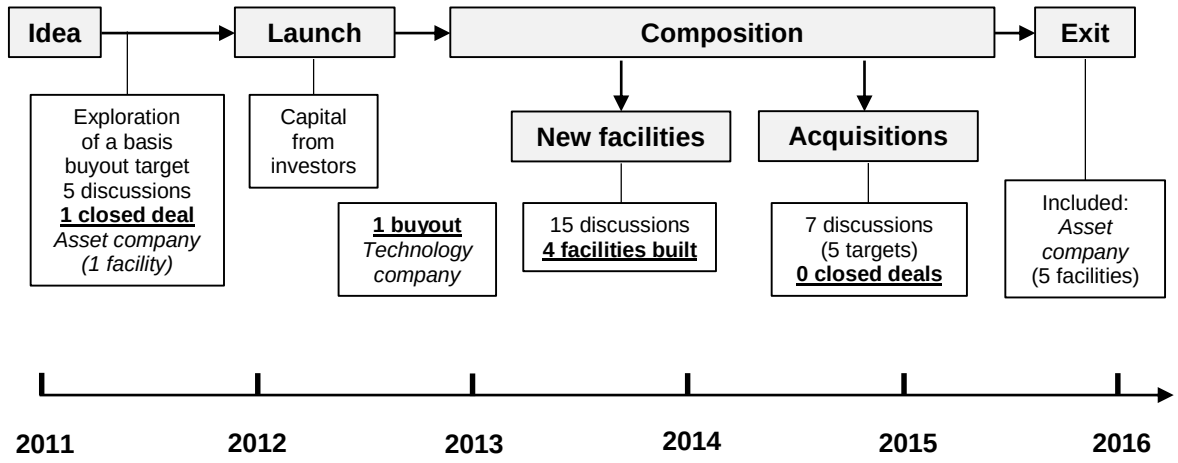

Figure 9. Lifespan of the Cleantech fund

4.2 Fund strategy

Since MCS are tools to implement strategy and remain sensitive to emerging initiatives, examination of MCS must be thoroughly linked with strategic plans of the organization. MCS practices will be approached by starting from the imagined business opportunity and strategic insights derived from it. Furthermore, while not directly defining MCS practices, the initial process of imagining the opportunity and formulating it into preliminary strategy will be first examined. Examination will be relevant for judgment and capabilities approaches discussed in

the framework. The founding idea behind the cleantech fund was to build a Finnish nation-wide network of biogas facilities. The strategic plan did not emerge in a straightforward manner from a completely new idea. Rather, it reflected past investment experiences, resources, capabilities and professional network. Thus, it will be purposeful to start analysis with the emergence and implementation of the initial idea.

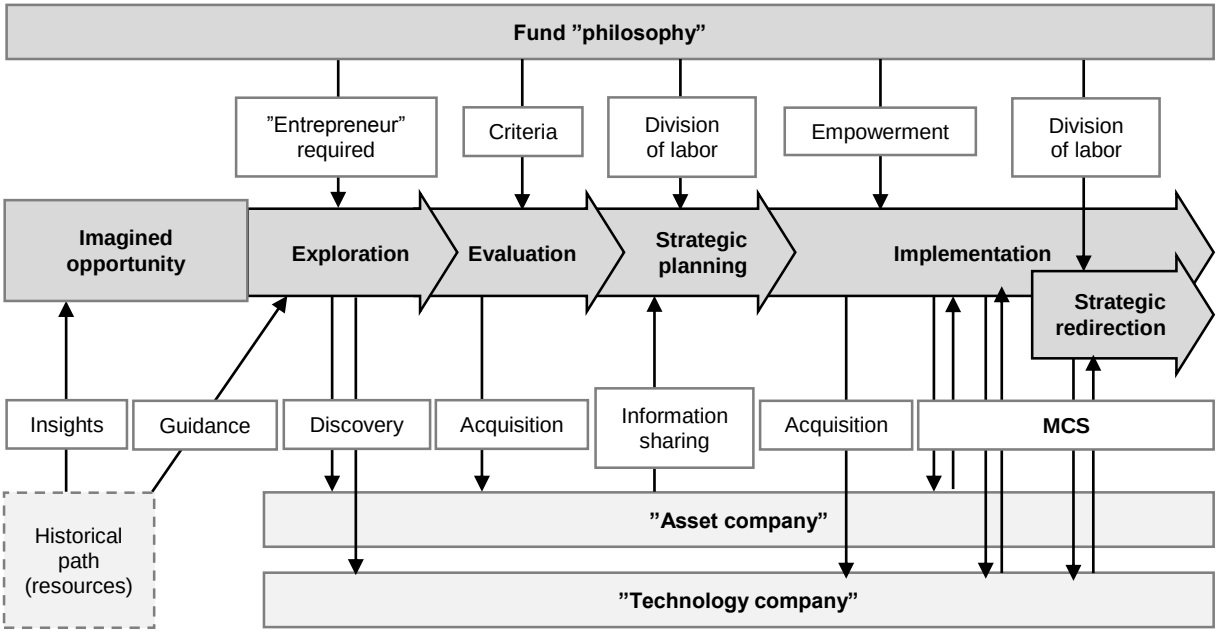

Figure 10. Path from opportunity to strategy implementation

Figure 10 above demonstrates the path from existing resources and imagined opportunity to execution of the entrepreneurial plan, exploring suitable buyout entrepreneurs, discovery, evaluation and acquisitions. The minor role of the acquired Asset company has been identified in strategic planning before further strategy implementation. As a part of the strategy implementation, the earlier discovered Technology company will be acquired. Strategic redirection of the Technology company illustrated in the figure means a dual strategy: partly serving the fund strategy, and partly developing business outside the fund. Furthermore, the fund “philosophy”, a distinct approach to PE investing and its influence has been causally positioned above the phases. However, the most essential task of the figure is that of illustrating the relative position of MCS practices in the whole fund strategy implementation. It is however worth to note that Figure 10 is an abstract illustration without specific features of the strategy implementation. They will be demonstrated in the latter parts of this research. The following text parts will construct comprehensive picture of the background of the Cleantech fund by introducing the phases and elements illustrated above.

4.2.1 Exploring and imagining opportunities

Differing from portfolio investing, selection of the first buyout target for the Cleantech fund had particular strategic significance. Instead of rushing with deals, the fund management spent several months exploring and evaluating different operators. Consequently, the target of the first buyout, the Asset company, was found only after several potential candidates had been evaluated. This procedure of establishing the fund can be explained to some extent with corporate history and more significantly with a particular approach to PE investing, labelled here as the fund philosophy. The process and its underlying idea will be specified in this part.

By the time when the opportunity of the Cleantech fund was originally imagined in spring 2011, the Asset management company had already launched and started to manage another cleantech fund of a different industry and technology. Discussions about other opportunities were held with business partners of former and existing activities. Information about biogas projects and new operators were introduced to the directors of the Asset management company. Further discussions were held with new contacts that had strategy and engineering background. These preparations gave insights about how the cleantech market and biogas industry were going to develop. Having been valuable in information purposes, the very first operators and professionals contacted were still not appealing as actual investment targets. However, aforementioned exploration of the industry and discussions with operators already served the purpose of scanning potential investment targets. Aforementioned findings and insights were evaluated against the fund philosophy, which will be introduced next.

4.2.1.1 Fund philosophy

The PE funds branch of the Asset management company had an exceptional approach to PE investments. This self-stated philosophy combined "entrepreneurs, ideas and capital". The idea has been explicitly stated in several company materials, both public and private, as well as with the interviews with the managing director of the PE funds branch and the investment director. The managing director of the PE funds branch clarified the role of "entrepreneurship" in their investment philosophy. Important for implementing the fund strategy has been Finnish entrepreneurship and transparency of targets. The latter refers to availability of data concerning cash flows, in order to evaluate profitability of a potential buyout target. Notably, the managing director emphasized the role of transparent data in communication and planning, referring to interaction between PE investors and potential targets:

> *"When these conditions are met, then we can find it to serve as a ground for further work. And communication will be much easier than if we just say that we got capital and we will see what we are going to do next." (Managing director, PE funds)*

> *"Central for our strategy is that we believe in the entrepreneur. We give a chance to be the entrepreneur. We support the entrepreneur instead of going there and telling one to turn left when the entrepreneur is turning right." (Managing director, PE funds)*

Consequently, for the PE funds branch, target company did not just mean a business entity with operations and assets. In their philosophy, founding a PE fund started with finding reliable entrepreneur(s) with specific knowledge and willingness to cooperate according to a shared plan. Without such partners, the whole fund could not have been founded. Thus, the imagined opportunity and strategic idea took time to develop and was dependent on a combination of complementary human resources.

> *"About that I would have stated here that let's start to work on some cleantech facilities with this management, I say no. It was a little bit like spinning around and only after some time we just ended here." (Managing director, PE funds)*

> *"So after this kind of background research and through numerous business meetings, that is, meeting different operators, we constructed the view of the market. Then we ended up making the first deals and then choosing the team and basis, and after that, then we went further with the actual strategy, to implement it." (Investment director, PE funds)*

Approach described above can be analyzed with concepts of entrepreneurial judgment, dynamic capabilities and MCS. Furthermore, other conceptual elements presented in the framework, such as TCE appear to contain relative explanatory power in understanding the forms that the philosophy took when it was implemented in the Cleantech fund. Generally, the fund philosophy can be better understood as a people-oriented approach to buyouts. Not only have company assets and the current business become evaluated, but the emphasis was laid on founding and leading individuals behind it. As the managing director of the PE funds branch said, in addition to technical aspects of any potential target company, background of the entrepreneur and the feeling of a person bore significant weight. Likewise, the investment director described the importance of trust. People had to fit into the big picture and division of labor. Like the managing director of the PE funds branch stated, the fund, which was accountable for investors, had to be in lead strategically. In turn, the role of entrepreneurs was to be more business-specific and operational from the perspective of the whole fund.

Worth noting is that the element called "entrepreneurship" in the fund philosophy is not equivalent to the concept of entrepreneurial judgment discussed in the framework of this thesis. The term referred to more common perceptions in commercial materials and presentations. Especially in the interviews the term "entrepreneur" was used to describe a person who is in charge of developing business organization with specific knowledge of one's industry. In light of judgment perspective, the fund philosophy did not require an "entrepreneur" to remain actual financial investor, unlike Foss & Klein (2012, 78) define the term for judgment approach. Rather, the fund philosophy implies role for an "entrepreneur" as a potential source of emerging strategic insights and ideas for strategy implementation.

There was no thoroughly thought out and fixed plan to be implemented exclusively by the ideas of the Cleantech fund management. Rather, the plan was continuously influenced by the new information that emerged from communication with the potential and finally chosen entrepreneurs. Example of such is the strategic position, which was realized together by the fact that the Asset company had substantially similar vision than the fund management (to expand biogas business). Although, realization of the market and its deficiencies took place during interaction. Similar views were presented by the entrepreneur-CEO of the Asset company and the managing director of the PE funds branch. As quoted above, the fund level managers did not see early strategy implementation as a straightforward process.

In light of dynamic capabilities, strategic significance of finding capable and reliable entrepreneurs implies that buyouts aimed to acquire more than just operational capabilities and assets. Buyout companies were not seen as just a bundle of tradable assets, but human capital was valued for its potential to contribute to the main fund strategy as an idiosyncratic component. Exploration and selection processes described in this part demonstrate that the PE funds branch had accumulated cleantech-specific knowledge. Connections and experiences from another cleantech fund of a different industry formed a path for the new one under examination. Furthermore, exploration process itself helped to acquire valuable information, foster learning and future opportunity seeking. By integrating target companies and establishing strategic division of labor, the Cleantech fund management practiced orchestration. Further examination in this thesis relates to the role of MCS in these interconnecting activities that increased idiosyncracy of resources. Through interaction and involvement into different activities, the target company management had a focal role in this

orchestration. Hence, despite the decision control of the fund management, target company entrepreneurs can be regarded as a complementary source of dynamic capabilities.

4.2.1.2 Exploration of the first target company

Five companies were considered as potential buyout targets during the period from spring to late fall in 2011. These company names were given as an informant data and checked from archived documents before conducting the interviews. Thus, these specific business cases were discussed during the interviews with both the managing director of the PE funds branch and the investment director of the Cleantech fund. The managing director of the PE funds branch explained that the investment philosophy of the PE funds branch was applied in this case by evaluating technology, background of the entrepreneur, and feeling, if those people seemed to be suitable for the fund.

Soon after the preliminary idea of investing in biogas industry, discussions with the first potential company were held during the same spring 2011. Compared to the other cases, the plans with the first one went relatively far. This notion can be supported with documented evidence concerning letters of intent. However, the plan collapsed. According to the investment director, there were too little credible investment opportunities. The investment director recalled that the company really had appealing ideas, but it turned out that they could not accomplish projects for the whole fund. Consequently, the case was discontinued.

After the first case, two business cases were conducted in the summer 2011. They were also discontinued by the PE funds branch. The second potential company was owned by a foreign investor. Discussions were held in the summer 2011. Described by the investment director, it was a smaller case that appeared not to be a credible basis for the fund. There were three main reasons behind this view. First, the team was not seen to have enough competence for executing the plan of the fund. Second, it was too small as an operator in the industry. Third, they did not have enough experience and evidence of actual credentials. The PE funds branch decided not to proceed further with the discussions. The third business case did not get far either. According to the investment director, the company was mostly dependent on one single person with no existing evidence of capabilities to accomplish projects and functioning technology. The case was discontinued by the PE funds branch.

The fourth and the fifth cases took place in the fall 2011. Having been a bigger company, the candidate in the fourth case differed from the earlier ones. Although, the case was soon

discontinued by the PE funds branch. The investment director mentioned two reasons for this in the interview. First, despite the evidence of cleantech capabilities, people in the company had not accomplished anything related to biogas industry in question. Furthermore, personal chemistry was perceived not to be supporting enough for desired collaboration.

The fifth business case and the first actual buyout target, the Asset company was found in the fall 2011 through a complex setting. The PE funds branch was supposed to be a co-investor in a project targeting at the biogas industry with two other partner entities. One of the partners owned the Technology company that had already successfully built a functioning biogas facility, operated by the Asset company. At that time, the Technology company owned a minority share of the Asset company. However, the partner behind the Technology company backed out from the deal, meaning that the original plan collapsed.

4.2.1.3 Discovery of the Asset company

As indicated above, the fifth case was not a failure for the PE funds branch after all. During the process, the Asset company was found. Direct communications continued with it after the original plan had been abandoned. According to the managing director of the PE funds branch, certain aspects made the Asset company especially appealing and considerable. There was a functioning biogas facility with a suitable production technology, and, with local technological support.

> *"That instead of just talking and making Power Point slides, those people had built a facility, they had taken entrepreneurial risk and made just that kind of a facility that they wanted.. And the economic figures of the facility, those were the best of the whole market. So, it was a profitable facility in every way. Very good concept, and before most, the people. We found entrepreneurs, which had like a realistic plan." (Investment director, PE funds)*

When reflecting causes behind the results of the cases, both directors seemingly emphasize different, position-specific aspects. The managing director recalled that "gut feeling" has been more important than thorough formal analysis. Although, examination of further discussion reveals that evaluation of entrepreneurs has reflected certain control derived from the PE investment philosophy and the logic of the Asset management business.

> *"For us it has been important in the whole process to be in charge and lead the process, since we in a way enable it, that is, we bring the capital. -- We have, like, the strategy, and they have the operational part. Capital and entrepreneurship. That is the thing. If there is anything like that the entrepreneur would immediately want to jump on*

our side, then apples and oranges get mixed. It has been like that in many cases, that we've just had to say that you do not fit, not possible." (Managing director, PE funds)

"If we were like Private Equity investors in the back seat and some other would drive, it would be possible, but not desirable. That is because we are accountable for the investors. -- Then otherwise they would ask that what the heck has your role been here, since you have even collected management fees. So, therefore this distinction has been important. (Managing director, PE funds)

When looking back at the cases, the investment director emphasized the role of trust. According to him, alignment of vision and experience had been a significant foundation for trust. There had to be evidence of capabilities and achieved results as well as a realistic vision of the industry and opportunities, connected with these resources. Furthermore, communication, behavior and other implicit personal characteristics behind trust were mentioned to be even more significant factors.

"Crucial lack of skills or vision was not as such a reason for abandoning any case. That wasn't the strategic thing, but the most important was particularly that we developed trust with the persons." (Investment director)

According to the interviewed directors, the Asset company met these requirements. On top of relevant industry-specific capabilities, personal characteristics of the entrepreneurs behind the company supported trustworthy image of potential collaboration.

4.2.2 Strategic planning and implementation

The discovery of the Asset company with a suitable entrepreneur brought in the necessary strategic element and enabled the fund to proceed with the plan. The fund was established soon after the strategic plan was formulated. It was demonstrated to potential investors. Early information materials included the basic idea about the business opportunity, strategic plan, its general implementation, business logic and related risks. In February 2012, 34 million euros of capital was raised for the fund by the parent Asset management company, for whom the PE funds branch was providing investment products. Consequently, the fund bought 100% of the Asset company in March 2012. In practice, Asset company included a biogas facility built in 2010 and its operating personnel. The entrepreneur-manager behind the Asset company had engineering background.

Business logic of the Asset company included revenue coming from handling input and selling output. First source of income was formed by the gate fees that were paid for receiving bio

waste. The waste served as an input, which were to be processed for valuable forms of output. Bioenergy, or more precisely, biogas was the primary output. As a side product, leftover was seen possible to be processed into fertilizers. A figure in early presentation slides for investors from 2012 demonstrate bioenergy and fertilizers as two equally sized output arrows. However, the latest income statements and discussions with the managers revealed that whereas production of biogas had been profitable, fertilizers had not been managed to utilize in a profitable manner.

The plan of the fund was to build a network of biogas facilities similar to that of the Asset company. Early slides for investors included a notion that by the end of 2013 the network should have consisted of five to seven facilities. When interviewed, the investment director of the fund mentioned about the same target numbers: at least five were constructed in a tight schedule. At the time of these interviews in November 2015 the fund consisted of four operating facilities and one under construction. According to the estimates, the fifth facility should be ready to operate by the end of 2016. In summer 2015 the fund had finally closed its investment phase and turned into exit mode. Investment phase was defined in the fund policy code earlier when the fund was originally launched in 2012. This meant that investments into new facility projects were not possible anymore. Compared to the original target of having facilities built by the end of 2013, the fifth facility project, that is, fulfillment of the strategic target, had started in 2015. Both the managing director of the PE funds and the investment director admitted that even though they had managed to construct 5 facilities, the target was not reached on the desired time as scheduled in the original materials.

When interviewed, the managing director of PE funds, the accountable investment director and the CEO of the Asset company defined the original strategy very similar way: to build the first nation-wide cleantech network of local operating facilities. The CEO of the Asset company emphasized the goals to (1) become the largest biogas company in Finland, and (2) develop Finnish bio waste disposal into a new level.

One of the leading guidelines had been strategic positioning, which required thorough analysis of the existing field and behavior of competitors. The CEO of the Asset company noted that a distinguished profile has been built on purpose. Failures and deficiencies of others have been significant factors behind more virtuous approach.

> *"When we operate in waste management business, then there are all kinds of dishonest and non-reliable operators. We don't want to operate in a way that our competitor might do." (CEO, Asset company)*

Strategic positioning was clarified by noting that compared to the other existing operators identified in the market, the fund aimed at "functionality" rather than one-sided price competition.

> *"In our point of view, the way others operate is not functioning. They disturb the markets, like applying competitive bidding in the flow of raw materials, focus on the price in purchasing, and not until then, they just try to figure out what to do with the stuff. And by functioning we also mean that there was already an existing technology that had been in use." (Managing director, PE funds)*

Altogether, examined evidence supports a view of a clear division of labor in fund strategy implementation. Interviews with the fund level directors and the CEOs of the target companies have revealed that there was a shared understanding concerning strategic position. Through board work, there has existed an interactive surface between the fund as the higher strategic layer and the target companies as the operational side. Furthermore, interviews with the CEOs of the target companies have not only demonstrated their understanding of vertical cooperation with the fund. Target company CEOs, both with engineering background, understood their own distinctive roles compared to each other. For example, the CEO of the Asset company expressed understanding of the challenging dual role of the Technology company as a horizontal partner. This dual role will be introduced next.

4.2.3 Dual strategy of the Technology company

As a part of the Cleantech fund, the Technology company had held two strategic roles. Primarily, aligned with the general fund strategy, it was delivering facilities for the Asset company to operate. Secondly, it had an independent strategy for its own business involving other projects than the facilities ordered by the Cleantech fund. While the fund strategy merely controlled the primary role of the Technology company, the fund was not constraining its secondary role, that was, development of further business. In this thesis, "fund strategy" refers to the idea of biogas facility network discussed above. A quote by the managing director of the PE funds branch captures the reason behind this strategic dualism:

> *"Now that we are in exit-mode, then our challenge will be that what we're going to do with the Technology company. That's because, our facilities will probably be sold to some industrial party, who decides just to operate them. One asks, where would the whole engineering company be needed anymore?"*

4.2.3.1 Acquisition of the Technology company

The facility operated by the Asset company was designed and constructed by another entity, the Technology company. According to company websites and the interview with the CEO, the Technology company, founded in 2003, was delivering solutions for waste disposal business and other organizations facing challenges with their own waste or sewage. After the buyout of the Asset company, the Technology company, in turn, was mainly owned by another organization originally involved with the early business plan involving the Asset company. Additionally, other significant competitors were as a role of minor owners of the Technology company. Soon after the buyout of the Asset company in spring 2012, the Technology company faced financial distress due to the lack of projects. Furthermore, a foreign technology company was planning a buyout of the Technology company.

At that time, the strategic role of the Technology company for the whole Cleantech fund was recognized by the management of the PE funds branch. Interviews with the directors of the PE funds branch as well as early documentations are aligned with this notion of concern. Based on the interviews and documentations, the fund strategy included an idea of minimizing technology risk by replicating a functioning technology. Thus, the Cleantech fund had a strategic interest of becoming the owner of the Technology company, that was, ensuring that own facilities would become built successfully like the one delivered for the Asset company. Interviews with the fund directors in November 2015 are notably parallel concerning the strategic consideration:

> *"The challenge we faced was that the Technology company was owned by wrong people. They weren't willing to develop it, but we accepted it at start, since we just wanted to ensure that the Technology company would build our facilities without focusing on some other projects. It was a strategic decision." (Managing director, PE funds)*

> *"If the Technology company had become an asset of some other owner not suitable from our point of view, success of the whole strategic investment plan of our fund would have been jeopardized. For us, buying the Technology company was partly mandatory. It was a strategic move to take it over." (Investment director, PE funds)*

> *"According to the original plan, the Technology company was not needed at all. We thought that we were able to buy facilities from whoever operator without owning the contractor. (Investment director, PE funds)*

In September 2012, the PE funds branch became the major owner of the Technology company. The remaining minority of the shares were owned by the operating management. The

entrepreneur-manager behind the Technology company had engineering background. According to documentations and interviews, the organization had six employees at the time of the buyout. By the time of the late interview with the CEO of the Technology company in December 2015, the number of employees had grown to 22.

Above description asset integration, a central element of dynamic capabilities, both in the sense of balance sheet assets and intangible human capital. After the buyout of the Asset company, the biggest asset integration was the acquisition of the Technology company. The decision was made dynamically due to changes in external environment. Acquisition helped to safeguard strategy implementation by reducing risks and securing delivery of planned facilities. Furthermore, the Technology company had industry-specific strategic information that was employed interactively with the fund management, when there were negotiations of potential new acquisitions. This role will be introduced further in the following parts of this thesis.

4.2.3.2 Strategic reconfiguration

Having been owned by the PE funds and as a part of the Cleantech fund, comprehensive strategy of the Technology company become a matter of the PE funds branch as well. Maximizing return for committed capital required development of the business, that is, ensuring that there were projects for the Technology company in the future, on top of the facilities ordered for the fund. Thus, there was a need to bend the rules of the fund in this special case. Compared to the fund and the Asset company, the Technology company deviated from them by significant strategic exceptions. Boundaries concerning industry and country-specificity of the fund were not meant strictly for the Technology company, which was allowed to expand and seek new opportunities alongside with the facility projects for the Cleantech fund.

> *"With this connection to the Asset company, the Technology company forms an independent strategy, which is in a way a spin-off of the fund strategy. Once the projects in Finland have been completed, consequently with these references the Technology company can start to deliver international projects. So, internationalization of the Technology company has been alongside a part of the strategy path." (Investment director)*

Strategy formulation behind the Technology company, however, was all but straightforward. According to the CEO (and entrepreneur) behind the Technology company, the strategy had been changing radically over time, back and forth even before the buyout. The original business was consulting. Providing professional services with only personnel and other expenses

without materials and fixed assets was seen as a way to minimize financial risks. Consequently, the business extended to cover technology solutions. The managers concluded that even technology was not viable to deliver comprehensive solutions for the customers. Therefore the Technology company decided to participate more intensively into projects, that was, financing and executing solutions as an associate. The first facility delivered for the Asset company before the involvement of the Cleantech fund was an example of such business logic. In practice, the Technology was a minority owner of the Asset company.

> *"These facilities that we were about to deliver and partly own were to generate growing revenue. When there were to be few similar facilities, it should have enabled us enough cash flow to build new ones. It was a great idea. However, it just didn't work since we only had capital for one project." (CEO, Technology company)*

After the Cleantech fund had acquired the Technology company, the strategy of the target did not change radically. According to the CEO of the Technology company, the fund proceeded similar strategy, to build facilities based on a pre-existing technology. Although, the fund enabled substantial resources in order to carry out several projects. Even though the strategy of the Technology company did not change substantially, its function as a part of the fund implied a return to an earlier strategic form, excluding financing.

> *"At that point we were not the comprehensive provider of the solutions. We in a way returned back to the technology and construction focus without elements of finance and ownership." (CEO, Technology company)*

> *"When the fund came along, we had six or eight people at the moment, and now we have twenty, and it has also enabled us to put more effort on different development procedures and to search for new business opportunities with more credibility." (CEO, Technology company)*

According to the investment director, opportunities of learning and international business related to the Technology company were acknowledged from the very beginning. However, approach towards seizing these opportunities varied back and forth. The Technology company was not encouraged to go international at the beginning. According to the investment director, Finnish projects were prioritized due to the reason that the company was small, and its resources were engaged with its own projects. After some time, international demand was recognized. It stimulated the fund to encourage the Technology company to make an international path. Entering into British and French markets was an experiment in 2013. It turned out to be more challenging to get international projects than what was previously

thought. Actualities were recalled: internationalization was a very difficult path. On the other hand, Finnish demand was seen coming to an end for such projects that were the core competence of the Technology company. Thus, internationalization was still seen as a must.

> *"We are tied to observe the international development of the industry, and all the time we are learning about what's going on in the big picture internationally." (Investment director, PE funds)*

> *"Now when the fund strategy approaches its final stage, then again we have to consider our own strategic direction. Like, should we explore opportunities by returning to the idea of partly owning projects? At the moment, we are exploring opportunities in the developing countries with financing of a third party." (CEO, Technology company)*

In conclusion, the fund had contributed strategic considerations according to the emphasis on internationalization, resulting in interaction and learning.

4.2.4 Alertness to strategic initiatives

Since the beginning of the Cleantech fund, flexibility to handle strategic initiatives had been dependent on the phase of the life cycle. Originally, room for emerging issues was defined in the early documents stating fund policies. There were certain inflexible fundamental principles that remained unchanged along the fund life cycle. On the other hand, sensitivity to emerging issues within those conditions had been considered in a discretionary manner. Originally, essential implementation of the fund strategy taking place during the investment period required more sensitivity towards strategic and operational initiatives. Ever since the fund developed further towards exit mode, less room was left for significant strategic changes involving investments and structural changes. However, since active and independent entrepreneurs on the operational side constituted a crucial element in the fund strategy implementation, they were still encouraged and even expected to present relevant initiatives to be considered at the fund level.

Investment director noted that freedom to respond to emerging strategic issues had been defined in the fund policies by the investment contract. Ideas that are aligned with the strategic frame, both operational and strategic initiatives were allowed to be proceeded. When looking back, several emerging issues had been discussed actively.

> *"For example we have been offered acquisition opportunities, which we could not know at that point when we started. And of course we started to seize these opportunities. And even though they didn't lead to closing deals, there was still this, that when ideas appeared, they were checked." (Investment director, PE funds)*

From a strategic point of view, the managing director of the PE funds branch recalled that once being in exit mode, the fund and its target firms were not likely to face significant changes under the current management. On the other hand, more operational insights reveal that the portfolio of the fund was far from a settled state, implying sensitivity for strategic considerations as well. Recent interviews were in line with the earlier news links and website information, especially about a strategic project being in progress. The CEO of the Asset company mentioned that in such mode, strategic initiatives are possible. The interviewee even emphasized the importance of development and critical evaluation of the existing strategy.

> *"The targets are derived from markets, that is, competitors and the whole environment. When it changes, then observing it may generate such insights that make it necessary to check our strategy." (CEO, Asset Company)*

In addition to the ongoing progress of the Asset Company, another potential source of strategic initiatives was the Technology company. Due to its dual role and scarcity of managerial attention from the fund level, the CEO of the Technology company was expected to take care of business development apart from the fund strategy. That means, the CEO of the Technology company was in charge of exploring and seizing opportunities in order to discuss them with the fund directors.

Related to strategic initiatives, the managing director of the PE funds branch mentioned opportunities that were recognized, but not carried further in the end. Business opportunities related to side products, fertilizers, serve as an essential example. Even though the potential of fertilizer business was recognized in the original investor materials, refining insights concerning business opportunities emerged during the fund life cycle. There was no predefined plan for developing fertilizer business, but rather sensitivity to discuss and prioritize the plans according to each situation and circumstances.

> *"Our side product business was left fully unfinished. That specific leftover has no required legal status. It is just a cost to the corporation, even though our original strategy included the idea of making it a product. Also, we could have developed strategy more into that direction, that let's go abroad." (Managing director, PE funds)*

From the early phases of the fund, there had been a clear strategic plan, which was focused and prioritized. Although, it did not absolutely limit efforts to develop separate business from the same resource base. Significant experiments that would have risked the primary plan were avoided on purpose. For example, new facility projects were not used as platforms for radical

innovation development. Instead, technology risk was minimized by favoring replication of already functioning technology. However, potential of emerging side paths for business originating from the existing assets was acknowledged. These opportunities were not blocked by default due to the deviation from the original strategic plan. At times, opportunities outside the frame were discussed and considered in order to explore further business opportunities. Once the primary strategic path was proceeded and not contradicted, the fund had an encouraging approach towards strategic side paths.

4.2.5 Analysis of ownership

The following topics will analyze ownership of the Cleantech fund, enabled by the evidence introduced this far. Approaches from PE literature and judgment approach will be utilized.

4.2.5.1 Cleantech fund as an investment

Positioning the fund into the matrix of different investment types by Barber & Goold (2007) requires cautiousness. Whether the fund had flexible approach to ownership or intention to buy and sell, depends on framing. The same holds with the question, whether the fund was only investing and influencing or building synergies on top of that. More specifically, the chosen relevant unit of analysis guides positioning. The case demonstrates that even though the facilities were invested separately, they were inseparable from the parent Asset company operating the network as a whole. Notably, synergies were built between the Technology company and the Asset company, while the Technology company had a dual role. These two business entities were not completely integrated. Rather, the expansion of the Asset company as a strategic plan was secured by controlling the Technology company responsible for building facilities. Only the Asset company was sold in the exit.

The type of ownership for the Asset company was "buy to sell" in terms of Barber & Goold (2007). For example, the fund had a predefined life cycle and a schedule for exit. In turn, the Technology company was owned in a "flexible" way, without any strict plans written in advance. The fact that synergies (division of labor) were utilized between the Asset company and the Technology company implies that the purpose was to "invest, influence and build synergies". Since the synergies were temporary, and the Asset company developed into a stand-alone entity, clear integration did not happen. Emphasis on that point would suggest that the fund merely "invested and influenced". According to aforementioned authors, in flexible or temporary ownership typical for PE industry, there would be none or at most limited opportunities to build synergies on top of investing and influencing. Notably, this research

provides a real empirical example of what such unlikely existing setting can be. Furthermore, the case provides extensive description of MCS that have been used to manage it.

4.2.5.2 Delegation of judgment

In light of entrepreneurial judgment, the customers of the Wealth management company, who were to invest in the Cleantech fund and provide capital were the ones practicing original judgment. A notion of Foss & Klein (2012, 195) appears relevant in the case of the Cleantech fund: original judgment does not imply that investors supply the complete content of entrepreneurial plans. Investors were not the first ones to imagine the whole entrepreneurial opportunity, but the ideas were presented to them by the Asset management company, including the PE funds branch. Additionally, original judgment of minor substance was practiced by the fund level directors. For example, the directors of the PE funds branch owned shares of the Asset management company. Furthermore, the investment director had a facility-specific reward system bearing resemblance to equity incentives. However, investments in the Cleantech fund imply that the limited partner investors shared the perception of business opportunity being potential and appealing. As well, that perception included that the fund management had sufficient abilities to seize the imagined opportunities in the first place. After the investments were made, the fund level directors started to practice derived judgment of the highest order.

In the case of the Cleantech fund and its facility projects, not only did the fund provide capital, but for new facility projects, it restricted financing roles of the target company entities. Especially after the fund acquired the Technology company, direct financing and ownership of facilities were no longer parts of the target company strategy. Although, the founding CEO-entrepreneur of the Technology company had remained as a minority owner. In turn, the CEO of the Asset company was hired with a specific, performance-based reward system. Entrepreneur of the fund philosophy has still common ground with academic concepts of entrepreneurship. For example, having specific information and initiative towards business development, entrepreneurs of the fund are those "discovering" or "imagining " opportunities and even making at least derived decisions about resource allocation or influencing judgment of higher order through interaction.

4.2.5.3 Buyout type

The examined Cleantech fund demonstrates examples of elements from both efficiency and revitalizing buyouts conceptualized by Wright et al. (2001a). An important point emerging

when examining the whole lifespan of the fund is that the control activities varied depending on different phases. Whereas the first phases consisted of elements typical for entrepreneurial and revitalizing buyouts, further development brought elements of efficiency buyout also. However, this shift was not straightforward nor plain. These features will be examined here in order to demonstrate complexity related to classifying buyouts using the aforementioned framework.

A fundamental difference can be identified between the examined buyout case and conventional conceptions of buyouts identified in the PE literature (e.g. Wright et al. 2001b; Barber & Goold 2007; Kaplan & Strömberg 2009). Usually buyout strategies strongly depend on the path of a target company. In other words, buyout companies themselves are taken as starting points for crafting a new strategy or improving implementation of an existing one. However, in this research case it was the fund management that originally had a clear business idea, independent of any specific buyout target. No sooner were the actual buyout targets, the Asset company and the Technology company found for transaction. Notably, both their assets and entrepreneurs served as a means for the implementation of a greater strategic plan. During the selection process of a suitable buyout target it was evaluated, if the buyout entrepreneurs were compatible with the fund level control systems derived from the higher PE fund philosophy. The entrepreneurs were required to share the fund level beliefs systems and to cooperate independently within the boundaries, diagnostic and interactive control mechanisms, such as extensive board work.

Before analyzing the case against efficiency and revitalizing buyout types from the synthesis, other two less fitting buyout types of Wright et al. (2001a) will be briefly checked as well. Plain analysis of the fund philosophy would easily suggest that combining entrepreneurial mindset with requirements of efficiency and narrower focus contain high risk of becoming a mismatch called "failure buyout". This risk was apparently managed by the fund management that put substantial effort into exploration and selection of suitable entrepreneurs before any transactions. Furthermore, latter emergence and realization of that risk was controlled by the use of interactive control systems. Central for this was the fund level approach "to challenge", as the managing director of the PE funds branch put it. Original buyout entrepreneurs were evaluated and challenged to develop managerial business thinking by face to face discussions.

Since the buyout targets were relatively young and small companies, they could easily be categorized as entrepreneurial buyouts. As introduced in the framework part, entrepreneurial

buyout type is typical for enabling activities within a non-bureaucratic flat organization. However, entrepreneurial buyouts mainly concern strategic innovation and efficient strategic decision-making. In this research case, strategy implementation went beyond technical capabilities of original entrepreneurs. Higher order beliefs systems did not emphasize bold innovative exploration. Rather, there was a need to establish a division of labor while avoiding too bureaucratic practices. Approach to technological development was rather incremental than radical.

Approach towards technological development in the research case resembles more managerial than entrepreneurial buyout types. Strategic level beliefs and boundaries about utilizing existing and duplicable technology implied more focus and meant that any considerable buyout target should have reached relatively established phase. Examined beliefs systems implied that the industry was not primarily defined by rapid innovations, but expansion of the business for sufficiently functioning solutions. Therefore, it was not consistent for the fund to bear unnecessary technology risk involved in fostering radical innovation. Many more MCS practices in the case were also found to have supporting role in developing operational business orientation. Thus, the buyout type very early adopted managerial approach implying elements from "revitalization" and "efficiency" types of buyouts.

From all of the four buyout types conceptualized by Wright et al. (2001a), the most similarities will be found from the revitalization buyout. As in efficiency buyout also, the idea of future success was based on already proven capabilities. However, the buyout was mostly upside driven instead of emphasizing treatment of downside problems. The fund had an enabling role. Target company beliefs systems were not taken as given and controlled with enhanced focus. Rather, there already existed a greater strategy and capital as higher order elements. Beliefs and boundaries brought stability and general guidelines for the buyout entrepreneurs who were granted substantial discretion. Since the entrepreneurs became operational managers in the fund wide division of labor, they were expected to develop their skills from technical aspects to more general organizational management and leadership. Effectively, the original business logic was not changed radically. Although, the fund served a revitalizing task by originally having a clear business idea and resources needed to expand it and support operational implementation.

The fund strategy implementation had elements of typical efficiency buyouts as well. Like in any typical LBO, significant amount of debt leverage was utilized in the investments.

Although, aligned with the finding of Wruck (2008), its role was not primarily managerial, but that of increasing returns on investor equity. Emergence and the use of diagnostic systems in form of financial monitoring and bonus compensation push the buyouts closer to the concept of efficiency buyout. However, common features with efficiency buyouts can be understood from upside view of revitalization buyout as well. Closer examination of the case reveals that the fund management did not prioritize implementation of sophisticated diagnostic systems, but they were developed more as a necessary outcome of the expansion. Again, the words of the operational level management ("entrepreneurs") had a lot of weight when information was gathered and operational systems were designed for decision-making through interaction. Furthermore, agency problems were not emphasized by the fund management as the core challenges of board work nor management control systems. Bonus compensation can have more dimensions than supporting compliance. For example the revised framework by Tessier & Otley (2012) identifies rewards as a distinct sphere that can support "performance", standing for beliefs systems of the original LOC.

In summary, positioning the examined PE fund against earlier introduced framework is not a straightforward task. Two distinctive features position the buyouts of the Cleantech fund apart from conventional buyout classifications. First, even before finding the buyout target, the fund management had imagined a business idea. Second, particular approach to PE emphasized the role of an active entrepreneur as a focal capability to be acquired. Thus, buyout was merely a tool to integrate complementary resources for a comprehensive entrepreneurial plan imagined by the fund management. This exceptional approach can be seen as an opposite of popular perceptions of LBOs where mature and badly managed companies are being restructured even by firing key personnel.

4.3 Strategic level of LOC

The Cleantech fund management did not explicitly apply any recognizable MCS package framework in its strategy implementation and formulation. Such frameworks were not used independently by any target company either. Interviews and other materials do not include any mentions about comprehensive strategy implementation frameworks. However, thorough examination of materials and interviews reveals that strategy implementation and fund management consists of different aspects that can be categorized using the LOC framework. Furthermore, following the idea of revised framework (Tessier & Otley 2012), a distinction

between strategic and operational level of controls can be identified as well. This part emphasizes higher fund level approach and is defined as strategic level. Although, some implications into the target companies (operational side) with relevant direct links will be analyzed. Activities of strategy implementation with more operational relevance will be, however, introduced more comprehensively in the last part. Identified control elements will be analyzed by using both the original and revised framework of LOC. Furthermore, other elements of the framework, such as judgment approach and dynamic capabilities will be incorporated as well.

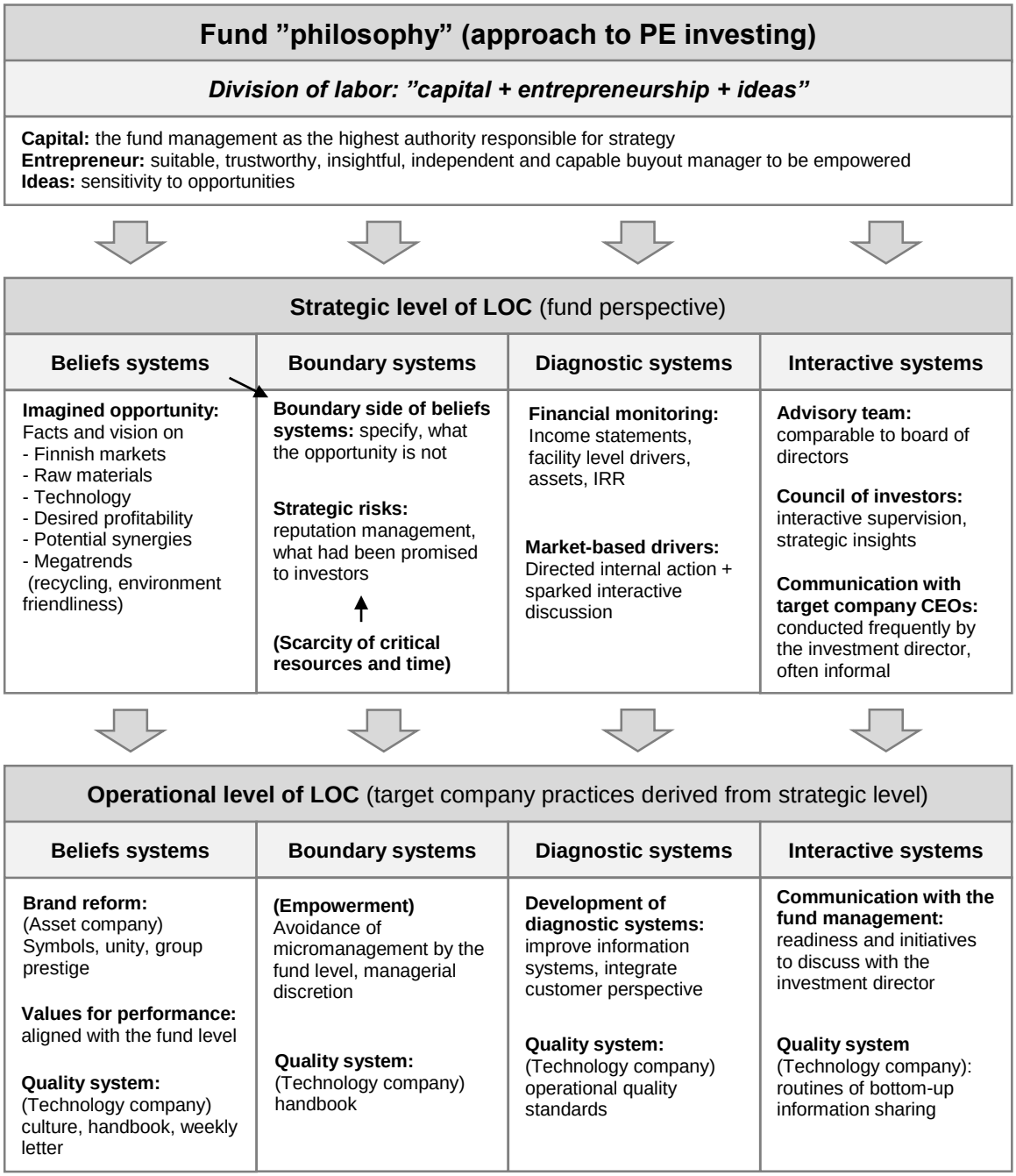

Figure 11. Strategic level of LOC and its direct implications

Figure 11 illustrates strategic and operational layers of MCS, defined by the distinction between fund level and target companies. Furthermore, MCS practices have been positioned under the influence of the fund philosophy. Major findings of strategic MCS and their direct influence on the target company level (operational side) have been summarized. Aforementioned elements of the figure will be discussed more specifically in the following parts.

4.3.1 Beliefs systems

Imagined business opportunity and the fund strategy were articulated by stating explicit beliefs. They guided strategy implementation by grounding business logic and indicating a direction for further actions. Various origins of these beliefs with strategic emphasis will be introduced here. Changes and the use of beliefs systems by the fund level will be examined also. Generally, strategic beliefs have been derived from the opportunity imagined by the fund-level management. In turn, target company CEOs have had discretion over formulation of operational beliefs systems. Examination shows that they were not always directly derived from the higher strategic beliefs, but drafting still took place within the strategic boundaries. In addition to description of identified beliefs, there will be analysis of how they meet the definition of Simons' (1995, 34) beliefs systems: communication and systematic reinforcement of basic values, purpose and direction for the organization. Furthermore, essential distinction between strategic and operational beliefs can be found from the evidence.

4.3.1.1 Origins of beliefs systems

Generally, strategic direction was based on both facts and a vision, or "imagined opportunity" in other words. Assumptions about the markets defined approach to domestic demand, raw material availability, realistic technologies, potential profitability and synergies within the portfolio. They all were pragmatic aspects that communicated and clarified the perception of opportunity. Furthermore, they signaled directions for further activities concerning market exploration, raw material deals, technology implementation, business development, financial engineering and exploitation of synergies. The investment director described the role of beliefs that guided opportunity seeking:

> *"It was like partly based on facts, and partly visionary, standing behind a view. So, it required beliefs behind the view, how it should work. Some beliefs have gained strength, that the understanding has been accurate, and for some parts we have needed to correct them. The big picture has still appeared to be such that it has been right."*

Both the managing director and investment director told that the base for beliefs systems was in the explicit list of strategic assumptions concerning the original views of the market, its direction and the business opportunity. There were five strategic assumptions in the presentation slides from 2011 when initial planning took place: (1) The markets: In Finland, there would be possibility to construct a nation-wide network of cleantech facilities of particular type by the end of 2013. (2) Raw materials: Required amount of certain input material would be available from the areas of new facility investments for the right price. (3) Technology: Input materials could be processed into four particular forms of outputs that have value. (4) Business: The production process would be profitable, providing desired rate of return for the investors. (5) Synergies: There would be business synergies between the facilities, making the portfolio more valuable than its parts combined.

Megatrends and environmental development were external drivers that influenced formulation of beliefs and were often stated to support them. The early investment materials from 2011 explained the growing role of renewable energy in national and EU-level future strategies. In addition to this alignment with societal strategies, several other reasons to invest in biogas industry were presented. One slide contained two columns of aspects that were recognized valuable. The first column described biogas. For example, input resources were mentioned to be domestic and "free". Technology and production process was presented as CO2 and emission free, being friendly to climate, water and soil. Especially the biogas industry was seen to have potential to increase independently produced capacity to electricity markets. In addition to biogas, the other column mostly described fertilizers as the side product of production process. Organic flow and utilization of waste was described in many bullet points. Reference to foreign countries using the same technology successfully was an additional point. More generally, job creation and investment in Finland were mentioned as well. Altogether, some points were directly derived from technical facts, and some demonstrated future prospects and potential development paths.

The managing director shed more light on the details concerning aforementioned strategic assumptions. At the beginning it was recognized that a law decree taking effect from 2016 would "kill" composting and increase demand for a particular type of waste disposal. Other trends behind market assumptions were discussed by both fund level directors. For example, recycling and environmental awareness were identified as societal ideals and growing trends leaving space for new business opportunities. Arguably, green values can be identified as

rationalized concepts that organizations are effectively adopting from surrounding society in order to gain legitimacy. Simons (1995, 38) recognized their role for beliefs and boundary systems. Altogether, these trends were explicitly stated beliefs that gave direction for opportunity-seeking.

The first role of the strategic beliefs (and boundary) systems of the Cleantech fund was to communicate the abstract plan to potential investors. The investment director recalled that the business idea was partly based on facts and partly on vision. The business opportunity was demonstrated to investors by stating assumptions, facts and trends in the early materials for investors. Thus, applying the judgment approach, capital was raised by using strategic beliefs and boundary systems to reach people with original judgment aligned with the plans of the fund.

Development of these beliefs was not straightforward. The fund management had constructed their views based on their past experiences related to slightly related cleantech business, as well as meetings with already existing operators. This information was not formulated in highly detailed form, nor was there an approach to gather extensive amount of specific information and conduct further studies before entering into business. Rather, the materials that were distributed to investors communicated facts and beliefs of the fund, implicitly requiring the investor to rely on the expertise of the fund managers.

Not all aforementioned beliefs were beliefs systems in the sense of LOC. They all may have supported investors' perceptions of opportunity and decisions to invest. However, in order to serve as a control lever in strategy implementation, a system must have implications for further actions within the organization. For example, environment-friendliness became comparable to beliefs systems when it really defined decisions concerning technologies and practices throughout the fund and its subsidiaries. After the core business was specified, abstract notions about future trends and job creation that were apparent in the investment materials did not specify direction nor imply actions as such. Thus, they were not effectively beliefs systems in the sense of LOC.

When asked, if the aforementioned vision behind beliefs systems had been common for all the entities and personnel, both fund level directors first confirmed it at a general level. The investment director defined the vision as follows:

> *"In broad view, the red thread is the same, that is, even though the companies are separate, this fund has a shared idea of building a network of cleantech facilities."*

About formal manifestations of this vision and beliefs, the managing director was more prudent:

> *"I must reverse a bit with my words as such that the vision was at the owner level just like I said. The original entrepreneur of our buyout company shares the view that these things are possible, but that, if these views have been implemented further in the organization to its employees, then I don't actually know."*

The next parts will examine the role of the strategic beliefs systems further and analyze direct implications to operational level.

4.3.1.2 Implementation of beliefs systems

CEOs of the target companies had discretion over formulating and practicing beliefs systems in their organizations. Beliefs that were responsibility of a particular CEO covered strategic issues in organizational sense. However, in the big picture of the whole fund they were merely operational. Fund level strategic beliefs did not imply strict operational practices, but they have left space and need for further specification. Roots of this distinction and its accountabilities can be traced back to the fund philosophy which recognized the role of an active entrepreneur. Thus, importance of initially picking the right entrepreneur had implications for beliefs systems.

Especially the interviews shed light on the shared mentality of respecting culture-sensitivity and specific knowledge. The managing director of the PE funds branch defined the background of fund management as "bankers" without specific knowledge about operational biogas production. Things that could be communicated further were the fund level codes and ideas, and that there were Finnish PE investors with them, proud of their part as owners. According to the investment director, target company CEOs shared the main beliefs and originally supported their viability with business-specific knowledge. A notion made during the interviews of the fund level directors supports the view of delegation and empowerment: the aforementioned directors were able to give very little examples of target company practices related to beliefs systems.

The CEOs of the target companies ("entrepreneurs") were trusted with discretion to formulate those ideas into their organizational contexts. Meanwhile, the fund management stayed out of

the way and avoided micromanagement. Arguably, the fund philosophy and active interaction between the fund management and target company CEOs filled preconditions for this empowerment to work. The managing director stated that the fund management did not implement major changes in culture. It was the entrepreneur of the buyout company who was left with discretion over such issues. Any clear discrepancies cannot be found when this view was compared to those of the investment director. The latter, who had been more involved in interaction with the buyout company, seemingly identifies more cultural aspects. They resemble notions made by the CEO of the Asset company on operational performance, discussed in the next part.

> *"Certain culture exists. We don't have actual written.. like values, nor that we would have held cultural discussions inside the buyout company. But some cornerstones exist, like for example when we operate in the field of environmental technology, then it is, like ethics. We are not allowing any risks of operating in non-ethical ways, which has happened in the industry. It is like in a way in the code, a thing that is in the inner practices. -- If someone started to diverge, then one would know what the consequences were." (Investment director, PE funds)*

The following part demonstrates more specific examples of how culture was specified in the target companies.

4.3.1.3 Recent changes in beliefs systems

Brand reform

There were relatively little everyday examples of visible formal fund level beliefs systems. Although, one fund-level idea of implementing strategic beliefs into formal everyday organizational life was found. The Asset company was originally a local business without a brand signifying cleantech and network nature of the business. The need was recognized when the management of the Asset company, originally one local facility expanded and started to operate other facilities around Finland. The new brand emphasized network nature of the modern industry. Compared to the previous name, the new brand name referred to cleantech facilities more generally and explicitly. Additionally, the new logo was more colorful, and it included a leaf symbol as a graphical signal of environment-friendliness. The managing director described how the fund level management originated the brand restructuring:

> *"When we had the buyout company with its facility in the beginning, we created a whole new brand for this emerging network. We wanted to make it something bigger than itself, and it should also be seen there as a shared vision among the personnel,*

that hey, I work in a nation-wide cleantech company, not just in a regional facility." (Managing director, PE funds)

The idea was partly directed to the employees around Finland to feel unity and have an identity of being part of something bigger than just a local facility. A brand implying greater purpose, meaning, image and unity are closely related to the beliefs systems of LOC. More specifically, Simons (1995, 37) leans on Ashford & Mael (1989) when describing three ways for establishing organizational values: asserting uniqueness, providing prestige to group membership, and using formal beliefs as symbols of what the organization represents. Modern cleantech network and bigger business signify uniqueness and provide prestige group membership. Furthermore, cleantech industry was creatively included in the name and the logo of the company.

Operational performance

The CEO of the Asset company noted that despite accountability and empowerment, operational and business-specific virtues or values were aligned and formulated together with the investment director representing the fund management. At some part this interaction helped to generate a shared understanding and align strategy implementation. Very little new beliefs systems were adopted top-down, but the investment director gave feedback and confirmed ideas and actions of the target company CEOs. On the other hand, this interaction related to formulation of beliefs systems helped the fund level to catch insights from operational level. For example, the CEO of the Asset company knew examples of non-ethical ways that had been apparent among the operators in the field. These views influenced strategic positioning of the whole business owned by the fund. Examination of operational side reveals that there had existed more formal statements about beliefs systems, such as mission and values.

"Our mission is specifically that we want to bring Finnish waste disposal into more sustainable and resource-wise level. According to our view, currently it is not at that level. With our business, we are able to contribute a lot to it." (CEO, Asset company)

"When we talk about the values, let's take three values that we have stated and explained. They are conventional but important, and they have dimensions as well. Our values are trust, respect of others and honesty. They are conventional in a sense that we want to do it internally this way, but it is not always self-evident for all in this business that operators are honest and trustworthy." (CEO, Asset company)

Recent events in the business had influenced those beliefs, according to the CEO of the Asset company. As discussed earlier, especially the mistakes of other operators had driven the

company to find another, improved position and profile. The Asset company had been accountable for the strategy implementation with high managerial discretion. Due to the frequency of interaction with the fund level investment director, many specific practices had been figured out together in a way that their exact origins could not always be traced back to any single person. Having more implicit nature, this construction of shared understanding resembles the idea of interactive use of performance (beliefs) lever, conceptualized in the revised framework by Tessier & Otley (2012).

Quality system

More operationally, the fund started an implementation of a quality system in both target companies. Implementation of the system was not sufficiently completed in the Asset company to get insights in the interviews. However, it was first implemented in the Technology company, which had grown from a team of several people to cover twenty people. There was a challenge to remain flexible and agile, while people focused and specialized in their own tasks instead of having general and varying roles as they used to. According to the managing director of the PE funds branch and the CEO of the Technology company, the idea of a quality system came from the fund level. It was first implemented in the Technology company during 2014, and similar project was started in the Asset company in late 2015. Especially in the Technology company, where the implementation had been finished, the system brought implications for all control levers.

Implementation of beliefs elements in the Technology company took a form of a quality handbook and a weekly letter. The first one was mandatory reading for every employee. Those documents included purpose, vision and values of the business. The values included honesty, trustworthiness, know-how and ambition, which seemingly reminded those of the Asset company. Thus, the quality handbook constituted a typical beliefs system. Secondly, the principles and ideals were reflected continuously in weekly letters. The practice of sending weekly letters developed during the quality system implementation. Significant part of the system was top-down communication to employees:

> *"Let's say that the biggest change is probably the change management in a way that we have hired new personnel. Everything in our organization is not anymore like it used to be in so called good old days, when we were small and agile, and when everybody used to do everything. I mean, in that point it was significant if we did 180 or 90 degree turn to some direction. Then folks were in a way comprehensive that they could do the turn quite easily. Today even with that twenty people it is already bigger, and we have such tasks and employees that have more specialized in their own things. I would say that*

informing about changes, it has become quite a lot more challenging, or I would rather say, at least that is a thing that has required more effort." (CEO, Technology company)

Background of the quality system was in the organizational growth and need to give new orientation to more robust organization.

"I have had this weekly letter. It is such that I usually write some small talk about what I have done, and if there is something, like there usually is, then it's nice to pick some specific people who have worked hard and used their elbow grease somewhere, then it's nice to give recognition that way." (CEO, Technology company)

The CEO described how he used letters to give praise to employees that had worked hard on common goals. In light of MCS, Simons (1995, 38) states that beliefs systems have a central role in articulation of vision and the role of participants as well as public recognition and reward. That notion fits well with the idea of aforementioned quality system and weekly letters. Thus, these examples are very typical forms of beliefs systems in LOC.

4.3.2 Boundary systems

The most central boundaries of the fund level strategy served two purposes. First, they clarified focus and supported realization of opportunities aligned with the core beliefs. Certain boundaries were directly being derived from the beliefs systems of the fund. Whereas beliefs systems defined markets and activities to be focused on, boundary systems, in turn, ruled out the ones to be strictly avoided. Secondly, they helped to take identified strategic risks into account. Certain boundaries prioritized and clarified organizational focus in a way that it supported achievement of sufficient rates of drivers behind desirable performance and return on investments. Additionally, formulation and practice of these boundaries in the fund setting will be introduced in this part.

Examined boundary elements generally bear high resemblance to boundary systems described in the LOC framework. As Simons (1995, 178) concludes, boundaries are formally stated rules, and explicit limits. Typical sources of boundary systems are business risks, legislation, organizational beliefs and shared industry codes (Simons 1995, 38-47). Boundary elements found in the case evidence will be analyzed against this framework. Two major aspects of the revised framework by Tessier & Otley (2012) will be utilized in the analysis as well. First, distinction between strategic and operational boundaries can be found in the case. Second, the definition of boundary systems will be extended to cover situations where shared understanding and interpretations of boundaries were clarified through interactive and diagnostic ways.

Generally, strategic boundaries were mostly derived from the strategic beliefs systems and strategic risks. Typical for boundary systems in the fund was the avoidance of micromanagement. Consequently, fund directors had not focused on designing detailed operational target company controls. Aligned with the fund philosophy, target company CEOs were granted managerial discretion over design of operational boundaries.

4.3.2.1 Boundary side of beliefs

Strategically, what had been promised to investors served as the ultimate boundary. In this case, strategic boundaries defined limits to the strategic beliefs systems, the markets to be avoided, including industry, technology and location. In addition to certain return on investors, these promises of positive nature included strategic cornerstones. Orientation to focus on biogas in Finland meant directly that investing in biofuels or expanding abroad were ruled out as strategic options. In other words, strategic beliefs had direct boundary implications too. Furthermore, such boundaries that helped to specify and enforce the implementation of the original business idea served the investors with original judgment by guaranteeing that the capital was not used in opportunities outside the selected frame.

The role of beliefs systems as the source of formal boundary codes was emphasized by the investment director. Fund policies that defined specific industry and country to focus on were originally core beliefs systems of the business. Additionally, they instantly served as boundary systems too. Concerning enforcement of boundaries, there were no detailed rules, and thus no predefined punishments either. Interference aimed at improving shared understanding. After these mechanisms, target company CEOs were relied not to deviate too far from the core beliefs.

> *"There are actually no predefined exact rules. Our approach has been more like interfering to that thing or these things when they have appeared, without that we would have steered anything in beforehand." (Managing director, PE funds)*

> *"There are no sanctions, but there exists a shared understanding, that if one behaves dishonestly, and before most, if one behaves unethically, it will be clear, that one will have to leave." (Investment director, PE funds)*

Generally, construction of extensive formal boundary systems was to be avoided, if necessary. Especially the interviews with the fund level directors revealed that the mindset and attitudes towards boundary systems had been defined by avoidance of micromanagement. Non-existence of strict pre-defined codes and policy documentations supported this view. However,

this does not mean that these issues would not have been thought out continuously. Rather, the need for certain boundaries both strategically and operationally had been identified and brought further on situation-specific basis through interaction.

Through more detailed examination of the fund management and target companies several boundary mechanisms can be found.

4.3.2.2 Boundaries from strategic risks

In addition to beliefs systems, identified risks were another source of strategic boundaries. As a source of strategic risks, boundary implications of beliefs systems seemed to overlap with strategic risks. Notably, in the PE investment setting, perception of strategic risks included those related to the business of the Cleantech fund and investor relations, the customers of the parent Asset management company. Diverging from what had been promised to investors (beliefs and boundary implications) was forbidden. Breaking fund policies and not fulfilling promises implied critical business risks for the whole parent company.

As noted above, strategic principles both directed and clarified focus. Strategic risks behind boundary mechanisms were identified against the fund strategy:

> *"All risks must be evaluated in relation to the original idea of the fund. So, that is, what has been promised to the investors. And that the return should be at a certain level, means, that it must be evaluated, at which risk rate will the particular project yield the target return." (Investment director, PE funds)*

Identification and explicit formulation of more specific business risks played a significant role in the early phase of the fund. Being promises to investors, they specified boundary systems of the fund. Original investor information materials from 2011 included a comprehensive slide about risks involved in both specific targets and the fund structure. First, nature of each risk was described. Additionally, for every identified risk there was a preliminary plan how the fund should control it. For example, risk of paying too much for a target entity was planned to be managed by requiring comprehensive valuation and due diligence process. Risks related to price and availability of raw materials was planned to be minimized with long contracts and requirement of sufficient basis before making the investment. Risks related to unexpected strategic occurrences and the need to change had been taken into account by reserving managerial labor for active ownership from the PE funds branch. Operational and key personnel related risks were seen to be dependent on initial fund level decisions concerning selection of the entrepreneur and facility projects. Fund-level risks concerning low liquidity

and conflicting interests of investors were seen as inherent risks, typical for the nature and structure of any PE investment. For an investor, the role as a limited partner meant that the fund management as the general partner had always the final word on decisions. The initial decision of an investor to invest in the fund and understand its conditions was crucial. Thus, aforementioned boundary controls left less room for unspecified features of investment contract and reduced uncertainty to be judged.

4.3.2.3 Boundary implications from scarcity

Partly related to strategic risks, certain inherent limitations or critical constraints were recognized in the business managed by the fund. Capital, time, managerial and sometimes even suitable operational labor were scarce. Despite their constraining nature, these "boundaries" cannot be interpreted as control systems as such. Control system is an intentional and purposeful practice in organization. It is rather the implications that defined control systems. Failure in optimizing scarce resources was seen as a risk to reach desired IRR on time. Both strategic and operational resources needed to be allocated in right activities one at a time. As a result, there was an extensive interplay between boundary and diagnostic elements, since shareholder value was continuously derived from operational performance drivers. Strategic decisions that did not have chance to generate enough value, were ruled out. Arguably, diagnostic and boundary controls of LOC are difficult to distinguish in this activity. Revised framework suggests that there exists rather diagnostic and interactive "ways" of using beliefs and boundary systems. Following that conceptualization, diagnostic "way" of using boundary controls describes this situation more unambiguously.

Interviews enabled to gather causal insights behind design of the boundary systems. Open-ended questions about boundary factors in organization led managing director and investment director to shed light on their personal perceptions. They both emphasized the inherent limits of the business case and overall scarcity of resources. Required rate of return, capital and time were mentioned as limitations by both directors. Consequently, opportunities that had no potential to yield the required rate of return had to be ruled out. Procedure of raising capital had its own transaction costs. Therefore, the initial amount of capital raised for the fund effectively limited the number of potential investment projects. Furthermore, the fund had a predefined life-cycle and even a schedule. Investments could only be made during the investment period before the exit mode. Additionally, the managing director emphasized scarcity of task-specific capabilities as a constraining factor. In practice, there were no market

supply for able operational management and other staff. Even training of new personnel was a critical issue depending on scarce managerial time. Together these factors challenged the whole organization.

> *"Education of the staff. That was yet another big challenge, since those operating people are not graduating from any school. Then everybody needed to get educated and trained for the job by our side. And maybe it was then that kind of a big risk that has been all the time included, and that has been obvious all the time from the point of view of the investors, that the IRR has been at risk." (Managing director, PE funds)*

The managing director went further in explaining strategic risks and even the ways they were implemented in diagnostic systems. Notable was the way how scarcity of resources was linked to strategic risks. Profound analysis of spreadsheet valuation models reveals that there existed a driver-based explanation connecting operational performance and shareholder value. These critical factors were not only measured, but prioritization and focus on critical activities had been guided by instructions and supervision. These aspects will be discussed more extensively in the following parts concerning diagnostic systems and project evaluation.

4.3.2.4 Formulation and implementation

There was a clear division of labor concerning strategy formulation and implementation, about how the strategy and its boundaries should be managed among the fund entities. Strategic choices implied things that needed to be avoided. They had been given by the fund level, and the fund management was responsible for accepting the strategy of each target. In turn, the target companies were responsible for implementing the strategy further. Based on the interviews and other material provided, there were no unified formal operational codes in the background. Rather, the fund management and the directors of target companies constructed shared understanding during their board work. For example, the investment director mentioned about the role of the general fund policy for governing the target companies.

> *"Well, actually these cornerstones have been integrated into the strategy of each target company, and their strategies have been founded by these principles. So, their strategy is based on these." (Investment director, PE funds)*

> *"The whole investment plan of the Asset company has been founded on the principles of this fund. Technology company, on the other hand, has some exemptions, that is, it is allowed to operate outside Finland, and it is allowed to have different customers than the Asset company. On top of that, then we even began to build new business for the Technology company, that is, extending from biogas. And the justification for this was that we saw that this is the way to grow the shareholder value of the Technology*

company, and our fund was to benefit from these procedures." (Managing director, PE funds)

Aligned with the idea of having trustworthy and independent entrepreneurs in the fund, cooperation between the fund management and the target company CEOs was significantly upside driven. There were no exact predefined rules and sanctions in case of wrongdoing and breaking the explicit boundaries. In turn, these independent CEOs had managerial discretion over implementation or non-implementation of formal rules in their organizations. Target company activities were not steered straight by the fund management. Despite the expansion of business, these companies did not implement significant practices of micromanagement either. Their operational employees were trusted independence as well. Mindset in this case was seemingly aligned with both strategic and operational levels.

Apparently, aforementioned mentality came from both the investment philosophy emphasizing independent entrepreneurs with initiatives, and also from the ideal of division of labor, specialization of the fund managers and target company CEOs. For example, by defining the fund management as "bankers", the managing director of the PE funds implied that their core capabilities did not relate to operational control or process restructuring. However, focus on strategic aspects required the fund management to understand and analyze target companies in order to distinguish strategic aspects from more operational ones. This took place in form of interaction. Information was collected from the operational level for the fund management to revise. Shared understanding of desired focus for activities was clarified through interaction between the fund management and the target company CEOs. Thus, following the idea of the revised framework, the fund management used boundary control in an interactive way.

4.3.3 Diagnostic systems

Diagnostic elements at the strategic level of the fund have supported boundary systems and directed focus more specifically. Primarily they focused on the critical drivers behind return on capital. The most extensive use of measurements was related to new project evaluation. Similar function was continued in the form of supervision after the facilities were built. Actual outcomes were communicated from target companies to the fund level, which compared them to projected performance and updated estimations of return from investor perspective. Such activities had potential to spark both strategic interaction and operational corrective actions. Furthermore, there were minor diagnostic elements that the fund implemented into the target companies. Certain ones will be introduced in this part.

Typical characteristics of diagnostic control systems are measurability of outputs, standards and ability to correction (Simons 1995, 179). Generally, the fund management had scarce strategic diagnostic control mechanisms combining aforementioned elements. Strategy was not primarily implemented by creating a universal monitoring system for the fund. Despite the importance of valuation models used in project evaluation, there were no formal, ultimate and extensive diagnostic systems as a backbone for evaluating and correcting operational efforts. Diagnostic systems were rather used selectively and occasionally in order to specify and clarify boundaries. Again, central for the fund philosophy was empowerment and avoidance of micromanagement. Target companies had been using their own operational diagnostic control systems. Notably, some examples demonstrate how the fund management supported development of diagnostic elements. They will be examined further in latter parts of this thesis.

4.3.3.1 General role of monitoring

Diagnostic elements had a central role in financial monitoring based on new project evaluation, which will be discussed further in its own topic. Spreadsheet models were used to generate estimations of shareholder value based on target company performance drivers. The use of such models was irregular and facility-specific. Comprehensive diagnostic models of the whole fund valuation were dated to June 2015, close to the exit mode. However, the fund management supervised financial statements quarterly with an eye on certain potential red flags to direct potential focus for further actions. No strictly regular routines to collect and supervise all possible metrics existed. However, the use of internal performance metrics was being developed continuously during the fund lifespan. For example, there was a bonus scheme introduced to link financial performance of the Asset company to the pay of its CEO.

When being in use, the aforementioned valuation sheets had both internal and external sources. Information input with market oriented emphasis was identified. Market information was collected regularly, including prices and other indicators of industry development. While not having been direct and continuous metrics of internal performance, this external information had at least indirect impact on both strategic considerations (interaction) and the way existing operations were carried further (diagnostics) more operationally. For example, profitability estimations behind projects relied on negotiated deals and market prices. Spreadsheet valuations included sensitivity analysis concerning the impact of input and output price variables on the project IRR. Furthermore, overall picture of the markets was gained both explicitly and implicitly through the negotiations. Scarce managerial resources were adjusted

according to the strategic view based on these experiences. However, these indicators were managed with less formal systems, such as informal communications.

Financial monitoring conducted by the fund management was the most central diagnostic control system identified in the Cleantech fund. Aforementioned notions mostly align it with the concept of diagnostic system defined in the LOC framework. Spreadsheet models were used to generate estimations of shareholder value from internal operational performance drivers, gathered from the target companies. Actual outputs were compared to target levels. Thus, there existed output and standard elements. If the calculated IRR fell below the desired (boundary) rate, corrective actions were to be considered interactively with the target company CEOs. However, the system was used irregularly and not comprehensively. Return rate estimations were facility-specific and mainly served the purpose of getting a facility established. As mentioned above, universal and formal information system did not exist. Target companies rather communicated their data further, which was analyzed by the fund management using own spreadsheets. Arguably, diagnostic nature of aforementioned financial modeling can be positioned better by using the revised framework. Diagnostic elements or "systems" had inseparable supporting role for underlying boundary systems, such as desired IRR and more operational resource allocation requirements derived from it.

4.3.3.2 Diagnostic elements implemented by the fund

Diagnostic systems were developed in the target companies during the late phases of the fund lifespan. The fund management had a central supporting role. Even though it was not actively involved in their practical development, interaction and ideas from the fund level originated implementation of certain systems into the target companies. Again, aligned with the fund philosophy, discretion and accountabilities were delegated further to the target company managers. This effect was caused rather by pull of the business expansion and its requirements than pushing a bold vision. The fund management did not prioritize implementation of extensive information systems. Apparently, it was not their core competence. Furthermore, actions and lack of supporting evidence imply that the fund management did not regard it as a major driver of value in fund strategy implementation. For example, there was no urge to integrate complementary resources concerning extensive information system transformation.

Due to expansion of business, there was a need identified to replace and unify smaller ad hoc systems with established ones. Thus, causally the role of the fund was an intermediate one. The fund management had minor orientation towards leading major information system changes

and building extensive monitoring. For a long time they were not seen as strategic priorities. As the quote below demonstrates, expansion and growth were seen as inherent drivers that eventually forced to start considering improved diagnostic systems as well.

> *"After the fund came into the scene, absolutely we have developed systems and monitoring, but that is already directly related to the fact that earlier there was a facility, and now we are building the fifth one, and this growth has been fast, and for that reason there has been a need to develop these systems." (CEO, Asset company)*

> *"If we get some feedback, then we take it seriously and fix if there is some problem to be fixed. Even if it should cause us costs, then it is just self-evident that we are going to take responsibility of it and fix it." (CEO, Asset company)*

Overall business mindset was increased in the Asset company by the operational use of diagnostic elements that directed focus on basic business operations. Especially reclamations and other feedback from the customers were paid attention, as can be seen from the latter quote. In light of dynamic capabilities and the fund as a whole, integrated capabilities of the target companies were built further to support an idiosyncratic combination. In this example, extending market orientation in a company that had a strong engineering focus was supported by MCS imposed by the fund level.

Even though the Technology company had a dual role in the fund strategy, worth noting is that the fund management supported implementation of their market oriented mindset into the Technology company by fine-tuning diagnostic elements and organizational accountabilities. Customer surface was added into the organization chart as a visible element.

> *"Now in the brainstorming event of the board this organization chart and structure have been changed in a way that the customer surface has been included. That is for that we understand it this way also, how important sales aspect is for the company, and that it is not just about the board, the CEO, finance and different units, but that there are also sales and international customers as well as Finnish customers. It is not purely an idea of the fund management, but it has developed during this board work" (CEO, Technology company)*

Yet another form of fund strategy implementation with diagnostic elements was a consideration and an attempt to introduce a financial incentive system into the Technology company. Aligned with the fund philosophy, the CEOs of the target companies were granted discretion over their own incentive systems. According to the CEO of the Technology company, potential annual bonus reward per average employee for exceeding the desired performance would have been so little amount that the idea was abandoned.

Simons (1995, 74-77) identifies role for diagnostic systems as a backbone for individual evaluation and reward systems. One minor example of such use is the bonus scheme for the CEO of the Asset company. If results in a monthly income statement of the Asset company reached certain level, the CEO could earn bonus income on top of the monthly salary. Following the definition of LOC, direct income statements were used as a diagnostic system by providing formal practice of standards, measurability and ability for correction. TCE approach to MCS (Speklé 2001) suggests that action controls monitor behavior and compliance, whereas result orientation focuses more on target setting and outcomes. Aligned with the fund philosophy, aforementioned incentive scheme emphasized outcomes. The revised framework would imply realizing it as a diagnostic use of "performance" (beliefs lever). However, summarizing the variety of diagnostic elements of the fund, they were more related to activity-specific and operational side. They will be discussed more in further text parts.

4.3.3.3 Diagnostic side of the quality system

Notable fund level initiative for implementing diagnostic systems into the target companies was the quality system. Practices of regular supervision and standardization supported corrective actions, if needed. Thus, the quality system bears resemblance to the diagnostic control system of the original LOC framework. However, further examination reveals that the core of the system was not just that of evaluating performance and improving quality of specific internal processes. As the managing director of the PE funds branch mentioned, quality of operations was not about technology as such. It was meant to support improvement in the organizational culture. Especially the CEO of the Technology company introduced the quality system by describing its role for supporting communication and clarifying orientation in form of a handbook and weekly letters.

As already discussed, the fund imposed an implementation of a quality system into the target companies. Relevant in light of diagnostic elements, it had standardization practices in order to supervise and direct performance. Thus, the fund was involved in implementing operational diagnostic elements as well. According to the managing director of the PE funds branch, the quality standardization in the Technology company was an important control mechanism. Similar quality system implementation was started in the Asset company, but very recently at the time of the interview. Thus, the CEO of the Asset company did not have comprehensive examples to be given in the interview.

> *"A big thing, which we did there, especially in the Technology company, was that they prepare standards for quality. So they did this ISO quality definition. The idea came from us like from the owner side. It isn't so much about technology as such, but it relates to the culture and processes, like quality of the operations." (Managing director, PE funds)*

Aligned with this culture and process approach is the fact that target company discussions of the quality system were more related to beliefs aspects, as can be seen from the beliefs part above. Especially the CEO of the Technology company discussed rather cultural than mechanical effects of the quality system, relating to communication of the big message and giving major orientation. Whereas big picture and orientation were "positive" implications of the system, quality standardization refers to explicit control in a "negative" or constraining sense. Once again, the revised framework of LOC contains explanatory power by paying attention to interconnected nature of different control levers. The diagnostic side of the quality system can be understood as identifying diagnostic ways to use beliefs and boundary systems in the target companies, that is, operational "performance" and "compliance".

4.3.4 Interactive systems

Interactive elements had a significant role as a backbone connecting management layers and control mechanisms. Board work formed an interface between the strategic and operational levels, that is to say, the fund management and the target companies. In addition to its interactive nature, the whole strategy implementation, communication of beliefs systems, general enforcement of boundary systems and the use of diagnostic elements occurred in form of interaction. Especially the investment director had a central role in these activities.

Examined interactive elements are generally recognizable by using the MCS framework. Original definition of interactive control systems in LOC emphasize dialogue about strategic uncertainties throughout the organization. Diagnostic system has four characteristic features: (1) importance according to the highest levels of management, (2) it demands frequent and regular attention from managers at all levels, (3) generated data will be interpreted and discussed face to face, and (4) it serves continual challenge. (Simons 1995, 180.) Utilizing ideas of the revised framework of Tessier & Otley (2012), interactive controls were found from both strategic and operational levels. The first mentioned refers to interaction between fund level management and target company CEOs. In turn, the latter describes activities of the target company CEOs to discuss and enable employees to question and share insights operationally.

4.3.4.1 Strategic interaction

The Asset company did have an own board of directors, including the investment director. However, its role was rather nominal. More effective channel of interaction was the advisory team, described earlier at the beginning of the case part. All central decisions of strategic nature were made there with the key personnel involved in the fund. Serving the central interactive role, it effectively replaced the task of the board of directors. Notable for this team composition was the involvement of the CEO of the parent Asset management company. In addition to CEO of the PE funds branch and the investment director, two external specialists were included as well. Again, the investment director served as the link connecting the target companies with the strategic level and higher order considerations.

> *"There were two external people as members, and we invited them because they might have views concerning this kind of business, strategy and its development. We took them in order to have external discussion and support. In this project, this thing has been more advanced than in any other project we have had before, and it has really been useful." (Managing director, PE funds)*

Furthermore, the fund had a council of investors including three representatives of the original investors. According to the fund policy documentation, the role of the investment council was that of supervising the general partner. Thus, no decisions were prepared among the council. The investment director was responsible for presenting current issues at the meetings. However, the managing director of the PE funds saw more interactive and strategic elements in the work of the council of investors:

> *"All the time we have had different discussions and it has varied from side to side. We talked about technology, about if the original plant was the right one to choose and so forth. Then we have talked about the market situation, and they have been informed all the time about this schedule of ours. It has been very important for one investor that we invest all the money they have committed to. -- But if these discussions have generated anything new, I'd say no."*

Unlike in diagnostic systems, there were extensive routines for interaction. First, as mentioned above, the Cleantech fund had an advisory team serving the function of the strategic board of directors. As an interactive communication channel, it supported alignment of the fund management with the interests of the owners and the Asset management company that had the investors as their customers. However, control in constraining sense was not the main priority. As examined above, discussions were motivated by strategic uncertainties and opportunities. Additionally, inviting industry professionals to the team as a source of interactive discussions

can be interpreted as a dynamic capability. The aim was to integrate relevant human capital from external sources.

Interactive links throughout the fund setting were highly dependent on the investment director. Both target companies had their own boards of directors. The accountable investment director of the fund served as a member of the advisory team as well as a chairman of the board for each target company. He was also invited to share information and insights with the council of investors. Thus, the investment director formed a link between strategic and operational entities. Discussions held in the meetings were of strategic nature, based on insights and information throughout the hierarchy. As the managing director of the PE funds branch mentioned, they had a mentality "to challenge" the target company CEOs to complement insights on uncertainties that the fund management had left open for discussion. Furthermore, these CEOs were expected have own initiative to share their ideas and insights too. Therefore, these interactive elements are clearly recognizable as interactive control systems defined in the LOC.

4.3.4.2 Implications in target companies

Interaction worked both top-down and bottom-up inside the fund. Enforcement and specification of other control systems often took place in form of interactive discussions, rather than extensive use of technical monitoring. Bottom-up potential of interactive elements was utilized, since interaction enabled emergence of new strategic discussions originating from operational insights, for example information gathered from diagnostic systems. In addition to regular board meetings, frequent interaction between strategic and operational staff took place in more informal ways, such as on the phone and via email. Readiness to interaction was a general cultural element. Additional specific examples of interaction will be described in the latter parts of the case description and analysis.

Remarkably, development of diagnostic systems and their interactive use were enhanced during the ownership period of the fund. Although, fund level influencing was not straightforward. The late quality system implementation in the Technology company introduced more information sharing in form of executive board. Furthermore, those members communicated own notes and background material further to the members of the board, which included the fund level investment director. The CEO of the Technology company defined these routines not as "interactive" in one's own words, but anyway working in both directions.

Altogether, the fund level management had a notable role in increasing interaction at the target company level. Implementation of the quality system, an idea from the fund, introduced more information sharing into the Technology company in form of executive board. Even though the CEO did not use the term "interactive", resemblance to interactive control systems of the LOC framework remains significant. Information flow happened in both directions and had potential to spark strategic discussions both in the target company and even in the Cleantech fund. Furthermore, interaction was hard-wired into the culture. For example, the investment director could contact the CEOs of the target companies informally and regularly. As discussed in the case part, interaction was a backbone and closely related to many activities such as business and technology development. Not all will be discussed here, but later in their own topics.

4.4 Activity-specific use of MCS

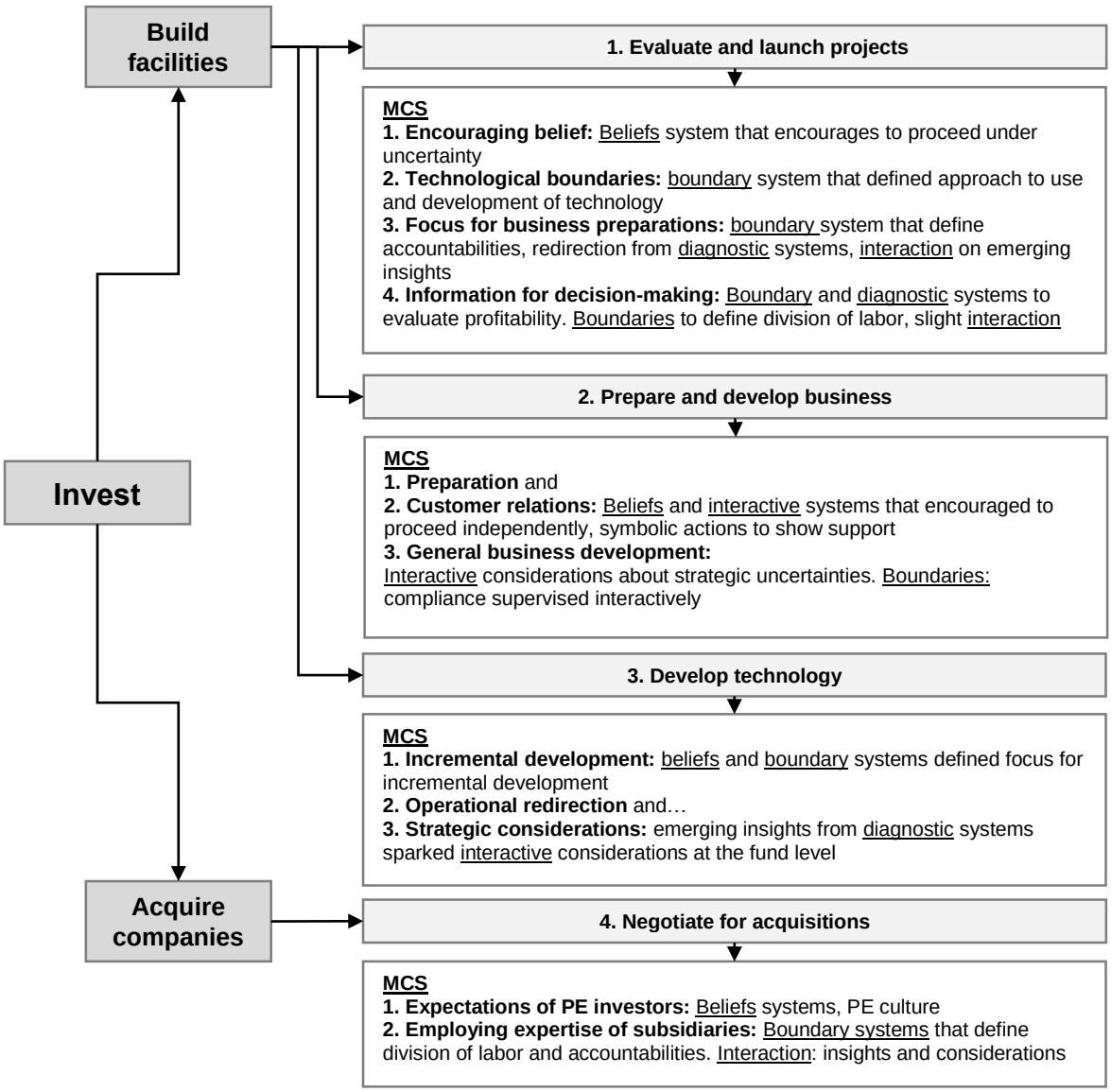

Figure 12. Activities of strategy implementation

Figure 12 above demonstrates the path of fund strategy implementation into the target companies. Most of the activities followed new facility projects, but the path was opened for acquisitions as well. Based on the strategic planning materials, specific activities were identified. They have been realized in the figure, and they serve as the structure for the following text parts. These activities consist of (1) evaluating and launching new projects, (2) business development, (3) technology development, and (4) negotiation of acquisitions. Each entity, PE fund (parent company), Asset company and Technology company had their own roles and emphasis depending on the activity in question. Evaluation and launching of new

projects (1) were intensive processes that mostly took place in the establishment phase of each facility. Business and technology development (2-3) have been more continuous processes in the background. Negotiation of acquisitions (4) relates to the nature of PE industry and the option of the fund to seize appearing opportunities of inorganic growth. Strategy implementation by these activities involved MCS practices, which have been summarized in the figure. These MCS will be identified and analyzed comprehensively in the following text parts. Notable for these controls is that they are being examined indirectly by interview questions based on formal materials concerning strategic activities and processes. They have potential to reveal MCS practices and their influence that are not explicitly stated in formal materials or interviews concerning explicit LOC categories.

4.4.1 Evaluating and launching new projects

New facility projects, so called "green field investments" were the primary element of building business and implementing the fund strategy. Throughout the investment period from 2012 to 2015, the fund started five facility projects. Behind these implemented projects were altogether 15 plans for different municipalities. This work required clear roles for each party: the Cleantech fund management, the Asset company and the Technology company. Both directors of the fund, as well as the CEOs of the target companies expressed it in the interviews that the fund brought required capital (equity and substantial debt leverage), whereas the Asset company was in charge of implementing facility projects, to constitute the entrepreneurial element at that part. In turn, the task of the Technology company was to deliver, design and construct the facilities for the Asset company. This division of labor was also stated explicitly in the early planning documents and Power point slides from 2012. In addition to bringing financial capital into the set of resources, according to the managing director of the PE funds branch, the fund level management was accountable for strategic control and decisions concerning these projects. Accountabilities and decision rights were formally stated in the organization structure, policies and contracts. Approach towards new projects was supported by encouraging belief from the fund level. Focus was brought by technological boundaries and division of labor among fund entities. Additionally, information required in decision-making was gathered by involving all fund entities with their specific knowledge.

4.4.1.1 Encouraging belief

More detailed level of strategy implementation in launching new projects involved aspects that can be categorized following the four levers of control. A clear fund-level strategic decision of

taking over the markets required bold entrepreneurial courage and initiative rather than time-consuming data gathering, analysis and preparation. Thus, implementation of such strategic move was not supported mainly by diagnostic and boundary controls, but by beliefs. The target companies were explicitly encouraged to be active and take initiatives. This encouragement was based on fund level assumptions concerning the markets and the impact of own operations on the environment. Furthermore, strategic interaction took place between the investment director and the CEOs of the target companies in form of board work and informal communications.

> *"One thing about our direction was that we stated it to be worth leaning forward and taking risks, so that the thing goes further and investment decisions will be made even if there were a slightly insufficient information at the moment. So, we saw that it would be fruitful to engage municipalities and carry on implementation. We had this belief that when you make the initiative first, then the markets will follow, and more input waste will become available." (Investment director, PE funds)*

> *"Such operating instructions have been given to us that we in the Asset company have started to make raw material contracts and contracts of selling biogas on the other hand. Then, assessment of the risk, that if we have enough base of these deals, and if we believe in the potential amount of deals in each project in order to reach profitability, then we have had discussions with the fund management also." (CEO, Asset company)*

> *"This initiation of new projects has been typically conducted together with the CEO of the Asset company. They have brought in their own part, but we have in practice explored the markets and evaluated the routes of each raw material supplier, and how end products could be utilized." (CEO, Technology company)*

In sum, the fund management encouraged target companies to lean forward and proceed with operations instead of hesitating too much. Primarily, it was a fund level belief of the potential market. However, it was not stated formally, but rather through guidance in form of interactive discussions with the target company CEOs. The CEO of the Asset company mentioned that these discussions concerned risks. Diagnostic drivers such as deal values were involved as well. Arguably, the revised framework will clarify understanding of the control systems used in the case of encouraging belief. There were interactive and diagnostic uses for the strategic performance (belief) system. Furthermore, encouraging beliefs system could be interpreted as "action rationalism" (Brunsson 1982) or judgment that recognizes value for rapid responses and agile operations in order to seize opportunities, rather than spending time and resources for additional assurance of viability of the opportunity.

4.4.1.2 Technological boundaries

Clear roles in new facility projects were supported by focus and boundary elements as well. According to the managing director of the PE funds branch, very few explicit boundaries were used in strategy implementation. One of them was the choice to stick with already functioning technologies, resulting in avoidance of new technologies. As discussed earlier, the fund strategy was based on finding a suitable entrepreneur with evidence of capabilities and functioning technology to be applied in new projects. The idea of replicating a whole facility concept served as a boundary policy of constraining nature. Consequently, it imposed strict limits on practical design alternatives of each facility area.

> *"More or less big statement is that we aim to focus on this basic business of ours. We don't proceed very easily to develop something, for example production based on the input materials, and to do experimentations. -- Quite cautiously will we invest in some new development path. That comes from the fact that we have an ambitious growth target and scarce resources." (CEO, Asset company)*

> *"When the house is full of engineers, they got a tremendous spirit to develop those processes all the time, and even when a project is being built. Unfortunately, that leads or can lead to a situation that eventually the customer gets a better product, but also all our money goes to development, and nothing will be left for salaries. Thus, it has been stated in the quality documentation that when some project is being sold, then it will not be developed further than what is promised." (CEO, Technology company)*

In brief, technological boundary systems were mainly generated from the strategic belief of achieving success by replicating already functioning concept. It was a beliefs system that had a direct boundary side. Sometimes there were opportunities to invest in further development, and they were evaluated through interactive controls. The quotes above demonstrate how limitations and scarcity had their impact on control systems, as discussed before. Eventually the approach to technological boundaries in the target companies as operational boundary was aligned with the strategic fund level boundary.

4.4.1.3 Focusing business preparations

The task of gaining customer base before launching a facility was mainly the task of the Asset company. The fund management guided and focused target companies to prioritize certain operators when potential business partners were approached. According to the investment director who contacted the CEOs of the target companies even at daily basis, the Asset company was informed to start contacting from waste disposal companies, cooperate with them and carry on planning suitable locations for facilities. The Asset company gained new insights

from these operations, which were communicated interactively to the fund management level, mainly to the investment director. Again, the investment director had intensive strategic considerations together with the managing director of the PE funds branch.

> *"How we see the fund, its management has given us strong support to do the things like our operational management and also the Technology company suggests. Little have they had to claim otherwise. It has worked out properly, and they have counted on the own expertise of the entrepreneurs." (CEO, Asset company)*

Both directors of the fund mentioned that the Asset company and especially the CEO were held accountable for gathering customers. This task was also stated explicitly in the original planning documents from 2012. These preparation activities will be discussed again in the part of business development.

To sum up, business preparations were mainly the task of the Asset company. Focus was supported by fund level instructions that served as operational boundaries. Content of instructions, such as priority list of activities was derived from fund level analysis described before as diagnostic systems and diagnostic use of boundaries. Furthermore, the Asset company gained new insights from their operations, which were shared and evaluated interactively with the strategic fund level. Notable is that these boundaries were not stated nor enforced formally in the sense of the original LOC. Definition of these boundary systems will be recognized better by the revised framework, which acknowledges social type of control and interactive way of using boundaries.

4.4.1.4 Information for decision-making

Boundary and diagnostic elements were applied together in evaluating and implementing new facility projects. Major aspects that were taken into account in decision-making were location and required rate of return. The latter included figures from initial investment, business and capital structure. Generally, there was a division of labor among the companies in the fund. Different entities were accountable for generating their own parts into the calculation.

As discussed earlier, nation-wide network as a strategic belief meant that facility locations were at suitable distance away from each other. The fund management took significant role in this exploration of locations. Achieving this network of facility positions was a strategic target. Thus, there were no specific locations such as central municipalities that would have had particular strategic significance. Within this frame, cannibalization was a major risk that was identified. Both fund management and target companies had their roles in controlling this risk

with diagnostic elements. Exploration of suitable target locations was supported by geographical distance measures and costs. Due to delivery costs of waste as production input, operating a facility within a radius of 150 kilometers from waste disposal customers was seen as a prerequisite in order to remain profitable. Generating this boundary element involved interaction with the already acquired target companies, who had business-specific knowledge.

> *"We estimated our market potential using the map of Finland, drawing with a compass around certain municipalities. We drew circles with a radius of 150 kilometers and then explored the markets within those areas, all potential sources of waste. Then, that way we found location for each facility." (Investment director, PE funds)*

Scarcity of resources set a challenge to allocate them and bring focus to finish one project at a time. Otherwise multiple simultaneous facility projects would have risked the fund strategy, time schedule and financial performance.

> *"The biggest risk in a sense is that if you have too many ongoing projects at the same time. When we built this chain of facilities, and did not buy it, then it meant that you could not have many simultaneous facilities in progress. Because, that you could build one project, you needed to have it functioning on the same day it was finished. It means that you needed to have those input flows, customers, and all other things managed and in place, and that was like a big job. And then if you had taken too much at one time, then you had the risk that construction was finished, but the rate of capacity in use would have been down, meaning that the risks would have then followed to the financial side: covenants, general development and financial performance and stuff..." (Managing director, PE funds)*

Investment decisions were made by filtering proposals through strategic constraints, required rate of return, location and time. Behind each project was a calculation that involved information gathered from target companies. Final decision, whether to invest in a facility in a certain location was always made by the fund management. Therefore, final calculations were made at the fund level by the investment director together with analysts. Calculations were multi-page spreadsheet models including operational data, financial income statements, balance sheets and financial contracts with financial institutions providing leverage. Task of exploring information was delegated to the CEOs of the target companies. As discussed earlier about diagnostic aspects, it was considered that the target companies focused on those drivers behind the income statements that required specific information, and the fund management focused on the balance sheet measures, allocation of capital. A quote from the CEO of the Asset company expresses the notion that knowledge of profession-specific and tacit nature was utilized by interaction with the CEOs of the target companies.

> *"Well, actually it has gone so, that to a large extent decision-making and preparation of new facility proposals have been in the hands of the Asset company, and the fund management has counted on the knowledge we have. All acquisition of market information has been the task of the Asset company." (CEO, Asset company)*

The CEO of the Asset company was in charge of checking internal operational and business-related assumptions behind the valuation models. Waste, energy and fertilizer-specific revenues and costs were included, to name a few. The most important operational data consisted of contracts divided to certain and potential ones. They determined amount of input, majority of the revenue and the actual percentage of capacity to be utilized. Additionally, potential capacity was an important measure with behavioral implications for the management of the Asset company. Unused capacity directed efforts to explore new customers, which was a crucial element behind revenue and financial performance. In turn, good capacity levels released more attention to other issues. This effort alignment was supported by providing financial incentives. If figures in monthly income statement reached certain level, the CEO of the Asset company could earn bonus income on top of the monthly salary.

In turn, the CEO of the Technology company participated in the investment evaluation by estimating costs of the initial investment. They had specific knowledge to conduct calculations at that part. Interviewees appeared to have very parallel and informative views concerning the role of the Technology company in new facility projects. The managing director of the PE funds branch emphasized the in-house nature and results:

> *"We have known the investment costs on behalf of the facilities, since we have had the in-house company working on them. Therefore nearly all cost overruns have been minimal. So, the projects have worked out just as planned, on schedule, but also according to costs and quality as well. Then it forms good basis for the facilities to build business further."*

The investment director made an additional point, that the Technology company bore significant risks involved in budget estimations. Consequently, interests were aligned.

> *"When they put the numbers on the table, then they were accountable for building the facility for that price. They had a clear role." (Investment director, PE funds)*

However, comments and material at the fund level revealed nothing about actual practices behind project estimations. In turn, the CEO of the Technology company shed light on the specific task of their company:

> *"In practice, when we build a facility, we have like 1200 rows different articles for which we prepare a budget for ourselves, for implementation, and then in practice each row will be observed, if we have managed to operate for within the limits we have estimated. Also, monthly and sometimes even more frequently we follow, if our expected project-specific margin remains, and in which direction it is going."*

The division of labor behind generating information and making decisions concerning new facility projects can be seen from the comments of Investment director and target company CEOs:

> *"We abandoned all projects that had no chance of achieving the desired rate of return with the basic assumptions. That was clear. Then we also abandoned such projects that would have taken too much time to develop. They would not have been finished within our time horizon." (Investment director, PE funds)*

> *"We have not endorsed any projects that wouldn't seem profitable at our point of view, and that view has been practically linked to it, that the investment director has conducted the final round, done the calculations, thrown some own assumptions on top of ours and checked if the IRR spawns the decision to go or not." (CEO, Technology company)*

> *"It has gone so that the investment calculations have leaned on the expertise of the Asset company and the Technology company. Then the advisory team may have taken a stand on some issue, like questioning something, and then we have worked more intensively on it and clarified things." (CEO, Asset company)*

Interactive aspects were essential. According to the investment director, who was the most central character operating on the interface between strategy and operations, the fund and the target companies, interaction was continuous. The Cleantech fund management had meetings concerning new facility projects on a monthly basis. CEOs of the target companies met with the chairman of the board (the investment director) on a weekly basis. Furthermore, they contacted each other on the phone and via e-mail more frequently, often on a daily basis. This view of the past experiences, which was supported by the CEOs and the investment director in the interviews, can also be verified by noting the vast amount of archived emails between these people on the subject.

External communication was an additional aspect, which linked indirectly to internal strategic interaction. Whilst it was the task of the Asset company to communicate with potential customers, that information required frequent strategic focus from the fund management layer. According to the investment director, frequent emerging information provided by the CEO of the Asset company was in a central role in building the case. Part of the cases were

discontinued, since the external potential partner was not willing to proceed within the schedule proposed by the fund. In other words, cooperation was ruled out by pre-defined strategic boundaries of the fund.

In summary, fund level decision-making required information gathering and processing. Calculations were conducted in order to evaluate, if proposed facilities could achieve sufficient IRR. For example the strategic risk of cannibalization was taken into account by calculating boundary distance of 150 kilometers between each facility. Thus, strategic boundary and diagnostic systems or "diagnostic use" of boundary systems had operational implications. There was a division of labor where parts of the necessary information were to be collected by the target companies from their own operational diagnostic systems. Relevant operational information was communicated and evaluated regularly through board work as a strategic interactive system. Following the idea of the revised framework, boundary systems were used in interactive ways as well. Notably, part of the cases were discontinued, since the external potential partner was not willing to proceed within the strategic boundaries of the fund.

4.4.2 Business development

For the fund strategy, business development of the Asset company was central throughout the life cycle of the fund. This topic covers three kind of activities that had strong market orientation and interface with business partners. The first business development operations took place even before facilities were built. They shaped the whole outcome of strategy implementation and determined future prospects. Second, particular emphasis will be laid on maintenance and development of customer relations. Orientation to markets was a focal aspect under development, since the operational managers having engineering background were given more business responsibility. The fund level directors were more involved with overall business development in cooperation and interaction with the operational CEOs. Thus, general business development will be described additionally as the third aspect.

4.4.2.1 Preparation activities

The first business activities concerned contracts for raw materials. According to the investment director, these deals were mostly about public bidding. Winning these bids was a strategic factor that enabled facility projects to proceed in planned locations. Efforts in communication with potential customers was held as an important driver for success in winning.

According to the old planning materials from 2012, the CEO of the Asset company was to be responsible for seizing opportunities related to raw material deals. Latter interviews with both the CEO of the Asset company and the fund level directors noted that this plan was followed, and the practical tasks were mainly carried out by the Asset company. According to the managing director of the PE funds, active control over these activities had been minimally practiced from the fund level. Any involvement was rather of supporting nature. An interview quote by the CEO of the Asset company demonstrates, how the operational values had a real effect on deals:

> *"We cannot enter into such price competition when we know that our competitor's practices do not fit with our ideals. So, the values have effects. It will not always benefit us immediately, but we have a strong belief that in the long run it will, and our image will remain good." (CEO, Asset company)*

4.4.2.2 Customer relations management

Soon after the early facility projects started to proceed, maintaining and developing customer relations further became an essential driver for financial performance. The fund level encouraged to allocate resources for these tasks and hire professionals. Notably, the investment director participated in many customer meetings. According to the director, one's presence served two purposes. First, representative of the owners from the fund level raised credibility of the Asset company in the eyes of potential business partners. Second, participation was supposed to signal cooperation and enhance belief of the Asset company that the fund was seriously implementing the plan.

> *"It was before most the task of the operational management. The CEO of the Asset company was in charge of those operations. And since we saw it to become so important thing, we hired two more persons to work on it. Altogether there were actually three new people in the Asset company focusing on customer relations with waste disposal, energy companies and like farmers also." (Investment director, PE funds)*

Thus, the fund management paid attention to support operational activities of customer relations management. They encouraged the Asset company to allocate resources for it, that is, to hire new people. Behind those considerations were interactive discussions about the operational situation. Furthermore, the investment director even attended to the meetings with some customers. That presence supported the fund philosophy and symbolized beliefs systems about unified fund and sufficient resources to implement the strategy.

4.4.2.3 General business development

In overall business development of the Asset company, the fund level directors were more actively involved. Both fund level directors emphasized their role in interactive board work. The investment director emphasized the division of labor between strategic and operational issues and that the issues of the fund were limited to strategic questions. In turn, the managing director of the PE funds branch mentioned that the fund level management offered conceptual ideas and even brought model of organization structure for the Asset company. Furthermore, central management practice of general business development was "to challenge", as the managing director of the PE funds branch put it:

> *"Now when you suddenly have x number of people working for you and several concepts, you have to think about branding, organizing... you cannot do it all by yourself as an entrepreneur. Then this way we have challenged the operating management, that you have to change the approach. And also in the way that if one has been the most suitable person for being in charge of production. Should there be a manager for logistics accountable for those things, and should there be somebody to take care of the sales, and that kind of stuff. Systematically. And then of course we have challenged the CEO as a person and as a leader, that should one develop leadership as a person as well"*

> *"Discussions which we had in board meetings and through which we have developed this business, they were based on challenging the operational management about viability of the model in question. If I may use one facility as an example, and input, which were meant to be collected from nearby municipalities, we asked about the region. Will there be better prices, secure supply, longer contract, what uncertainties related etc. In these kind of things we were systematic, but we had no predefined model for management practices." (Managing director, PE funds)*

Altogether, general business development and its preparation activities took place following the idea of division of labor. Strategically, accountabilities for different entities of the fund were defined explicitly in the examined materials concerning strategic planning, resembling typical boundary systems. However, facility-specific business development emphasized discretion of the operational management in the Asset company. In light of strategy implementation, support rather than control defined these activities. Thus, there were no specific operational boundaries found to be used for business development. Rather, beliefs and interaction systems were recognized. Mostly the CEO of the Asset company directed the efforts to negotiate raw material contracts. The fund did not practice formal enforcing and testing for boundaries. Since the target company CEOs and the fund level management communicated continuously with each other on daily issues, alignment was essentially based on underlying beliefs systems and interaction. Following the conceptualization of the revised framework,

beliefs and boundary systems can be seen used in an interactive way in the case of business development. Again, managerial discretion and the absence of formal boundaries can be seen as an outcome of the overall fund philosophy implemented by the fund.

In light of dynamic capabilities, improved business understanding in the target companies together with fund-wide division of labor extended external market observation. For example, location-specific market information was accumulated in the Asset company during business development. This ability to process specific information independently from a business perspective complemented scarce resources of the fund management to identify and imagine opportunities. It was the use of MCS that enabled expansion of dynamic capabilities. Beliefs systems supported independent and capable role for target company CEOs. Aligned with these beliefs systems, cautious approach to micromanagement and moderate amount of predefined boundary control from the fund level left space for emerging insights. Additionally, frequent use of interactive systems effectively linked parts together to serve the division of labor.

4.4.3 Technological development

The Technology company was in charge of major technology development due to its expertise and dual strategic role. Additionally, incremental and more operational development took place all the time in facilities of the Asset company. Even though the fund strategy strongly emphasized already functioning technologies and minimization of technology risk, it did not disable technological development or experiments completely. Generally, strategic beliefs and boundaries directed focus to incremental innovations, rather than radical ones. The fund level management had not imposed strict operational limits on the target companies, but rather relied on interaction and alertness to emerging ideas. Operational redirection with diagnostic elements could yield incremental technology development in the Asset company. More substantial technology development and technology changes required interaction with the fund level.

4.4.3.1 Beliefs and boundaries for incremental development

The general message down from the fund level encouraged to put effort into incremental technological development and generating new ideas, according to the investment director. Then these ideas were discussed in the board with the investment director. Moreover, the investment director who had been representing fund level management in the boards of both target companies concluded that technological development in the Asset company emphasized fertilizers, whereas the Technology company focused on production processes. Notably, the

CEO of the Asset company emphasized the focus on business and prudence with technology development.

> *"These facilities have developed significantly on the way. The first facility didn't include handling of bio waste, but the others do. Then this latest facility is like version 3.0, if the first was 1.0 and the others 2.0" (Investment director)*

> *"I'm not saying that we wouldn't follow technologies, for example, and how they develop and stuff, but we are not the first ones to test them. We are not the operator who tries everything. Then, we would rather want to implement and invest in already tested solutions. Of course, then we follow, how different technologies develop." (CEO, Asset company)*

In comparison, approach to technology development was more straightforward in the Technology company.

> *"We are doing it always when there are some resources free. I mean mostly human resources. We are doing this kind of internal product development somewhat all the time. -- Not so, let's say management development maybe, or that kind of experiments, but things related to our own products." (CEO, Technology company)*

The fund strategy was not based on a belief of radical innovation, but replication of existing solutions and rather incremental development. Thus, beliefs and boundary systems were used to bring focus. Especially the Asset company was assigned to focus on business development and at most developing fertilizers, which was originally defined in the fund strategy. Actual technological development took place mostly in the Technology company. Due to its dual strategy, attitude towards technology development was more liberal and straightforward.

4.4.3.2 Operational redirection

Technological development had not been steered from fund level with notable diagnostic elements. In turn, diagnostic practices imposed by the target company managers had a significant role in technology development. Interactive use of diagnostic control elements in the Asset company had sparked initiatives that required higher level considerations. For example, how facilities follow water balances, the CEO of the Asset company described basic diagnostic correction procedure:

> *"When we have followed how we have operated and then noted that it requires some changes, then it has been made, and we have continued monitoring how it will do after that."*

The same procedure had generated interactive discussions that resulted in incremental production development within the frames of the fund:

> *"Concerning this same water balance issue, actual investment decisions have been made in order to develop production." (CEO, Asset company)*

The target companies were expected to share their emerging technological insights with the fund management. Operational diagnostic systems served as a basis for operational redirection and incremental technological development. These diagnostic systems provided basis for interactive discussions. To some extent, aforementioned control systems supported and specified asset reconfiguration as a dynamic capability.

4.4.3.3 Interaction for strategic considerations

New business opportunities and immediate revenue with the latest facility sparked technological development in order to include fertilizers in the process. The practical idea originated from operation-specific knowledge, which was discussed interactively with the fund level. Resources and permission to proceed came from the fund level.

> *"For example in the latest facility project, new raw material, new waste has made us to arrange the fertilizer scheme differently. That is where we are doing a new kind of solution. As such, it didn't start from that we had this kind of fertilizer stuff available for some kind of use, but from that we had a new raw material and the revenue from it enabled us to arrange the last production phase differently. So, there was that element, and we identify potential in it." (CEO, Asset company)*

> *"That fertilizer side is, well, a big challenge, which we have tried to develop inside the Asset company. How we could generate fertilizers and bring it further as an own process. Now, looking back, that has come from us, that we enabled the experiment, allowed and not rejected it. We had to hire an extra person, and that cost was like an investment. Although, about that it would have come from us that take a look at this, start making mold out of this output and get it done, it didn't come from us" (Managing director, PE funds)*

Apparently, there were times when diagnostic redirection implied need for strategic permission and resources. For example, the latest facility project required strategic fund level attention in order to allow certain experiments and process re-engineering. Apparently it was not clear, whether some ideas could fit within the boundaries of "incremental" development. Thus, these beliefs and boundary systems were used both diagnostically (operational level) and interactively (strategic level).

4.4.4 Negotiations of acquisitions

In addition to so called "green field" investments of new facilities, inorganic expansion was an alternative path, enabled by the original fund policy, as discussed. The fund management was active in exploring and seizing opportunities related to acquisitions, meaning that the fund management led these operations. Seven negotiations took place during the investment period between 2012 and 2015 altogether. Even though any of them did not end in closing a deal, they were focal processes in implementing the fund strategy. Exploring opportunities for inorganic expansion were a fund level belief. Furthermore, these activities gave fund management valuable and real time information about the markets. In addition to the fund management, target companies were not completely isolated from these negotiations, which again made them objects of strategy implementation. Especially the expertise of the Technology company was employed. Finally, several example cases of negotiations and potential acquisitions will be revised in light of control mechanisms.

4.4.4.1 Expectations of PE investors

The role of PE investors was found out to be an additional strategic level belief that guided fund management to seek opportunities from other established businesses.

> *"There was a belief that when you're with PE investor, acquisitions are relevant and can be expected. These discussions were held. We both contacted actively ourselves, opened discussions. Then we were contacted, since it was known that we had capital, and by default people tend to belief that PE investors is willing to buy, if the idea is good." (Investment director, PE funds)*

> *"We have had an approach that in order to get the fund started with good velocity, inorganic growth would be okay. Then we had two other operators in the same market, so we had to approach them." (Managing director, PE funds)*

4.4.4.2 Employing expertise of subsidiaries

Whereas substantial efforts were put on the negotiations supported by the strategic beliefs of the fund, basic fund level controls concerning profitability evaluation, strategic alignment, operational values and schedule served as strict boundaries. The fund management introduced a division of labor for the target companies in order to evaluate potential targets, their profitability and compatibility with the fund. Key persons of the fund management and the target companies worked interactively in order to build common understanding.

> *"Communication related to acquisitions was my responsibility. I held negotiations, it was my duty. I asked opinions from the CEOs of our target companies, and they were*

discussed. Each of them had a chance to take a position and state their views. And well, before most, the views of the CEO of the Asset company had a lot of weight in a sense that one would have become the leader of those new ones, if acquisitions should have occurred. That was significant. The CEO of the Technology company, in turn, had technical view of the project." (Investment director, PE funds)

According to the CEO of the Technology company, they were actively supporting the fund management with technical issues. Interviews with the fund level managers support this view. In addition to the traditional due diligence process, managerial evaluation of potential acquisition and organizational integration, technical aspects were central as well. Assets and their compatibility have been evaluated mostly by the Technology company. According to the managing director of the PE funds branch, technical expertise of the Technology company was employed in specific calculations and profitability evaluation. Furthermore, these views formed a basis for interactive, qualitative strategic considerations as well.

"Alongside with our primary business, we have conducted technical due diligence for the fund when there have been potential business cases. Sometimes we have done it all by ourselves, and sometimes there has been a third party with us in order to raise credibility, but still we have always checked those cases thoroughly." (CEO of the Technology company)

4.4.4.3 Effect of controls on negotiations

Example cases shed light on the control systems that affected negotiation activities and decisions. In addition to formal calculations, the managing director of the PE funds branch described other qualitative reasons and comprehensive judgments about cases. There were three example cases that were particularly discussed. The first example did not seem promising at start, but the belief to explore acquisition opportunities increased optimism and prolonged negotiations. Collapse of the second example case illustrated the fund strategy of combining entrepreneurship, ideas and capital. Ownership of that business was dispersed over twenty people with occupational interests related to the case. An independent entrepreneur was lacking. The manager representing the owners did not have suitable professional background in order to serve the entrepreneurial function stated in the fund philosophy. Thus, the main concern were not the fixed assets in terms of accounting and production, but business mentality and alignment of behavior. The third example case was not concerned seriously, since the operator represented too different business that of biofuels, not gas. However, exploration was not terminated directly. Due to strategic boundaries, that option was still ruled out eventually.

In sum, opportunities for inorganic expansion were explored as a part of the fund strategy implementation. This procedure was based on the beliefs systems originating from PE culture. Industry practices are recognized as a typical source for beliefs systems in the original LOC framework (Simons 1995, 42). This belief not only enabled negotiations, but affected them strongly. For example, one case was prolonged even though it did not seem promising at the start. Furthermore, one divergent business outside the strategic boundaries was considered, but still it had to be ruled out. Exploration was affected by the beliefs and boundaries derived from the fund philosophy as well. This beliefs system that supported exploration of opportunities for inorganic expansion apparently supported asset integration, an activity of dynamic capabilities. Furthermore, aforementioned negotiations were supported by employing the expertise of the target companies. Thus, the target companies complemented the source for these dynamic capabilities. This division of labor was not static and of boundary nature, but rather ad hoc practice resulting in interactive discussions within the fund.

5 Discussion

The aim of this research was to match theory with an empirical case on how PE investors used MCS in strategy implementation during ownership of buyout targets. The case examined what MCS were used and how. Furthermore, the factors that influenced the design and use of MCS were of notable interest. Distinctive motivation behind this research was to realize MCS of PE buyouts in a wider context involving parent organization and its customers as investors. Similar case research had not been conducted before. Thus, expansion of scope in aforementioned way raised the need to integrate additional and relevant theoretical insights into the framework. Systematic combining (Dubois & Gadde 2002) was chosen as the research method. Consequently, the research was defined by continuous and incremental matching between theory and empirical findings. Variety of different data sources were used to construct a longitudinal view of the fund strategy implementation. This approach shed light on the use of MCS practices during the whole ownership period until the final exit mode. The research was retrospective in a sense that the research took place during the final phase of the PE fund lifespan. This exceptional case illustrates how MCS were not designed and used in isolation from factors such as ownership, parent organization and capabilities. Such aspects have been of minor or even non-existent interest among earlier MCS research. This will be discussed in the first part identifying factors of MCS in PE context. Second, strategy implementation by MCS design has been covered in the second part. Third, emerging complementary insights to MCS, processes of strategy implementation, dynamic capabilities and their interconnections will be discussed.

5.1 MCS in PE context

Understanding MCS within the context of PE investing requires recognition of several interrelated elements that have direct implications on MCS. In this case, there were three major aspects that influenced MCS above the fund management. First, complex organizational setting requires expansion of scope to cover issues related to the parent company and investors as its customers. When the Cleantech fund represented the Asset management company, they had to consider risks related to much bigger reputational assets of the parent company. Second, the PE funds branch had an exceptional approach to PE investing that emphasized division of labor and the role of an empowered entrepreneur. In light of MCS, such philosophy implied interaction and had cautious approach to extensive formal control. Third, MCS that defined the

particular Cleantech fund under examination was used in early investor relations when capital was gained. What had been promised to investors constituted beliefs and boundary systems. Generally, beliefs and boundaries were defined by the imagined business opportunity. In turn, the abstract tendency of implementing beliefs and boundaries with diagnostic and interactive controls were derived from the fund philosophy.

5.1.1 Implications from the organizational setting

Judgment approach provides the big picture that captures the original source of capital and delegation of decision authority, which had their own impact on MCS practices. The Cleantech fund under examination was one of the many PE funds operated by the PE funds branch, a subsidiary of the parent Asset management company. The Cleantech fund was offered as one investment opportunity exclusively for the customers of the Asset management company. Thus, the customers were the source of capital, practicing judgment of the highest order in examination, either by owners (original judgment) or treasurers (derived judgment).

This setting has strategic implications for the MCS practices of the Cleantech fund. Even though returns for the parent company and the customers were diversified among a variety of asset classes and even different PE funds, risks of the Cleantech fund were not completely isolated. In addition to directly financial perspectives, different risks related to fund management could be interpreted as strategic risks of the parent company. Failure in keeping promises to investors and fulfilling qualitative expectations to investors were a threat to the reputation of the PE funds branch and the parent Asset management company. Management practices and concern of risks within the Cleantech fund signaled competence and culture of the whole parent company. Thus, potential investors were informed explicitly and implicitly about the fund philosophy and management practices that were planned to be used in strategy implementation. These elements will be discussed further in the following two parts.

5.1.2 Exceptional fund "philosophy"

There was a distinctive approach to PE investing in the PE funds branch, a shared "philosophy" that was stated to combine "entrepreneurs, ideas and capital". Practically, it meant a dynamic division of labor. The fund brought capital and took responsibility of strategic issues and final decisions. In turn, entrepreneurs of the buyout target companies were expected to be reliable, independent, motivated, and insightful persons with provable business-specific capabilities. Thus, the fund philosophy can be understood as a people-oriented approach, where buyouts

aimed to integrate human capital as a focal element. The fund was based on an idea of an opportunity, but the buyout targets were treated as complementary sources for ideas and exploration. Comparable investor-specific, distinctive and yet abstract approaches to PE investing have not been identified in the existing PE literature reviewed in the framework. Having further MCS implications, influence of the fund philosophy relates to the parent company and proves the importance of realizing bigger organizational setting in PE and MCS research.

MCS implications of the fund philosophy are tightly linked to capability approach. The fund philosophy was not apart from the organizational setting. This exceptional approach to PE investing emphasized interaction, empowerment and dynamic mentality, which required the use of multiple control systems aligned with these features. Practical implementation of such philosophy would not have been possible without capabilities suited with it. For example, extensive diagnostic systems and non-existence of interactive channels would have resulted in a conflict with the philosophy appreciating division of labor and operational independence. The parent company and the fund managers had their own history with gained experiences and capabilities. Thus, the philosophy reflected the capabilities and motivations available for the PE funds branch.

5.1.3 MCS in investor relations

Before discussing MCS variety identified in the Cleantech fund and its strategic activities, formulation and purpose of fund-specific MCS can be traced back to early investor relations. The imagined business opportunity was demonstrated to investors by explicitly stating beliefs systems that could guide further actions. They combined facts and vision. What had been promised to investors as beliefs systems, constituted the ultimate boundaries as well. Communicated beliefs systems were of abstract and strategic nature without many operational details. In turn, boundaries were specified with identified risks and suggested mechanisms to control them. Other elements of the LOC framework, diagnostic and interactive systems were not clearly identified from the early fund-specific materials for investors. At most, investors could only realize vague implications of other MCS practices from the abstract fund philosophy. The role of independent and reliable entrepreneurs as a focal element for the fund-wide division of labor implied emphasis on interactive elements and avoidance of extensive diagnostic control. Altogether, beliefs systems were communicated to investors in an abstract form, whereas strategic boundary systems were specified even further. Suggested diagnostic

and interactive control systems were not introduced explicitly. However, their roles were somewhat implied in the fund philosophy.

As being customers of the Asset management company, investors made their capital allocation decisions in the context of above mentioned information on MCS practices. When potential investors shared the same subjective perception of opportunity and its implementation with suggested controls, investments were made. On top of realizing opportunity in quantitative financial returns, qualitative aspects can be seen as an additional source of subjective value for an investor. Performance and compliance of values, such as domestic business development and environment-friendliness were controlled with beliefs and boundaries. Despite being vague, also the role of diagnostic and interactive controls were implied in form of fund philosophy. As part of investor relations, it had potential to influence alignment of judgment. Especially against the fact that approaches emphasizing entrepreneurs and combinations of capabilities in buyouts have not been widely recognized in conventional PE literature, the examined fund philosophy was distinctive.

5.2 Strategic level of LOC

Analysis of controls that were defined by the Cleantech fund management would resemble the core of any typical MCS research that focuses on strategy implementation by senior managers. However, the setting of a PE fund consisting of the general partner and the portfolio companies means that MCS implementation has to cross firm boundaries. Consequently, fund level controls and decisions have been defined as the strategic layer, whereas target companies represent the operational side. The following to parts will discuss theoretical matching of this exceptional setting and findings that show the Cleantech fund using unexpectedly rich variety of MCS for a growth business.

5.2.1 MCS across firm boundaries

This research on MCS expands scope that has conventionally focused on single organizations with senior management as the highest authority. In the Cleantech fund, there were target companies under the governance of the fund management (PE funds branch). Thus, implementation of strategy and the use of MCS crossed firm boundaries. Interactive board work appeared to be a focal mechanism in this task of controlling and enabling dynamic functioning of fund-wide division of labor. MCS that cross firm boundaries with board work demonstrate the idea of LOC in boardroom (Crombie & Geekie 2010). Apparently, in the case

of the Cleantech fund and its underlying philosophy, desired buyout entrepreneurs resembled a profile typical for stewardship theory than agency theory. Despite being used in boundary purposes also, the nature of interactive board work was strongly upside driven.

The case illustrates a clear distinction between strategic and operational layers of MCS. Whereas Simons (1995, 128) briefly notes boundary systems having separate "strategic" and "business conduct" types, explicit layers of LOC have been conceptualized in the revised framework of Tessier & Otley (2012). Contemporary development of this MCS approach improves realization of the case and provides better tools in matching theory and empirical world. Issues that were strategic to the target companies were usually operational in point of view of the fund. Issues that were strategic to target companies were regarded as operational in the fund-wide strategy implementation. Notably, operational control mechanisms of the target companies were not actively designed by the fund management. Aligned with the fund philosophy and division of labor, target company managers were given discretion over their MCS details.

5.2.2 Variety of MCS for a growth business

Notable variety of different MCS were identified in the Cleantech fund. Simons (1995, 127-128) suggests a path of MCS evolution over the life cycle of the firm. According to the idea, extensive use of different control systems would take place only after the firm has become large and mature. Interactive control systems are the last MCS in the path to be implemented. The business operated by the Cleantech fund was not mature, established or large at any measure from age and personnel size to revenue. However, despite being new and relatively small business, the Cleantech fund had multiple diverse MCS in use from the very start. Against the suggested path, interactive control systems were used from the start even more frequently and widely than identified diagnostic systems. In summary, the Cleantech fund as a growth business used MCS much in a way that is conventionally (Simons 1995, 128) seen as an orientation of a large and mature company.

Derived from the fund philosophy, the fund management had a cautious approach towards extensive design and use of formal constraining controls. Shared understanding concerning beliefs and boundaries was generated frequently with interactive channels. Identified fund level use of diagnostic controls, such as financial performance measures appeared to be closely related to strategic boundaries. As examined in the case and analysis part, many examples of diagnostic and interactive controls were difficult to separate from other control systems.

Arguably, Simons' (1995) original LOC defines MCS with such emphasis on formality that it has limited power to match theory and empirical case. Tessier & Otley (2012) provide helpful insights that improve aforementioned matching. Their revised framework treats diagnostics and interaction as ways of using actual performance (beliefs) and compliance (boundary) controls. Hence, this case illustrates how the revised framework that puts original control levers into a causal hierarchy can clarify identification and analysis of MCS.

5.3 Activities for strategy implementation

The case of the Cleantech fund illustrates the importance of examining focal activities and capabilities of strategy implementation in MCS research. Frameworks that provide a static view of a MCS package may not sufficiently capture relevant activities for strategy implementation. Notably, poor attention to such activities may even prevent realizing aspects of existing MCS practices. The following part demonstrates this with evidence from the Cleantech fund. Additionally, the second part summarizes findings in light of dynamic capability approach.

5.3.1 Activities for strategy implementation

The strategic plan consisted of focal activities that were defined in the internal planning materials. Strategy implementation was not originally perceived as a composition of any MCS package. These processes, such as building new facilities and developing business constituted the explicit strategic roadmap. As apparent in the case and analysis part, they were often subject to multiple control systems that supported and controlled them. Furthermore, research of these activities revealed additional MCS on top those identified during examination of explicit documents, formal practices and interviews. Especially interview questions about MCS practices in terms of LOC did not sufficiently cover control of aforementioned activities. In turn, additional interview questions emerged during examination of other data sources.

Additional findings that were not of formal and explicit nature are still relevant in light of MCS. The revised framework still recognizes the possibility that beliefs and boundary systems can be practiced interactively. Two examples demonstrate this. The fund management continuously encouraged the target companies to lean forward and proceed under uncertainty, instead of hesitating and spending time for being cautious. This encouraging beliefs system was used interactively. Furthermore, beliefs system concerning PE culture of exploring opportunities for inorganic growth. It was not communicated through formal symbols, but

shared in the fund setting culturally and clarified interactively. This distinction between cultural values and symbols has been clearly conceptualized in the MCS package framework of Malmi & Brown (2008). In sum, these findings demonstrate the materialized potential of triangulation to support discovery and improve matching, an exceptional benefit identified in the systematic combining literature (e.g. Dubois & Gadde 2002).

5.3.2 Dynamic capabilities approach to strategy implementation

Dynamic capability approach provides concepts to match dynamic aspects of strategy implementation. Capabilities of dynamic nature are those that enable integrating, building and reconfiguring resources. Identifying opportunities and fostering renewal are closely related to these capabilities. (Teece 2007; 2012) Such elements were identified in the case, having been supported and controlled by the use of MCS. Initial buyouts can be seen as a major act of integrating capabilities. Entrepreneurs of the target companies were involved in resource orchestration, which was supported with interactive and encouraging beliefs systems. By inviting external industry professionals into interactive board work of the advisory team, the fund management also integrated additional human capital in a dynamic way. The fund management built acquired target company capabilities further by improving their business understanding and expanding their technical orientation to more managerial directions. This process was longer and involved more MCS. Interactive systems were used to "challenge" and share insights. The fund management assigned open-ended questions to the entrepreneurs as CEOs. Managers were granted discretion over the use of MCS in their own organizations. They were challenged to continuously improve their mindset and organizations by sparking discussions on ad hoc uncertainties. In addition to interaction, business orientation was also supported by operational implications to performance (beliefs) and diagnostic systems that integrated customer perspective into management routines.

Increased business understanding of the target company layer together with interactive MCS extended the scope of opportunity identification. Identification of opportunities for integrating and building resources was supported with such beliefs systems that encouraged to proceed under uncertainty and to explore potential acquisition targets as a PE investor. Already acquired capabilities of the target companies were involved in this exploration by using other MCS. For example, strategic boundaries defined division of labor, and interaction was used to share emerging insights. More operational asset reconfiguration was supported with diagnostic systems. If target companies identified any potentially strategic insights, they were encouraged

to share them interactively with the fund management. In summary, interactive control systems in the original sense of LOC served as the significant backbone for dynamic capabilities. However, other MCS, such as encouraging beliefs and diagnostic systems were occasionally involved as well. Discussion above shows yet another notion: there are many other potential aspects of dynamic capabilities to be applied in MCS research, on top of considerations of environmental velocity (McCarthy & Gordon 2010) introduced in the framework.

6 Conclusions and implications

Earlier research on MCS in PE investing has been scarce in general. Within the frame, there is even more notable lack of comprehensive longitudinal single case studies with sensitivity to contingent factors. This research space motivated to examine how PE investors used MCS in strategy implementation during their ownership period of buyout targets. Empirical setting of a PE fund hierarchy provided a means to expand conventional scope of MCS research that has typically focused on single organizations with their senior managers as the highest authority of implementing MCS. This research aimed to capture wider setting of PE context and relevant factors that influenced MCS beyond the boundaries of a buyout company. The examined PE fund was not isolated from the parent Asset management company and its customers as investors and limited partners. Potential to contribute to MCS research on PE was not the only opportunity that this diverse case provided. PE context demonstrates how the use of MCS can cross firm boundaries through board work. Furthermore, the research enabled to improve general understanding of relations between MCS, ownership and capabilities.

Existing body of research did not provide sufficient examples of similar cases with aforementioned approach to MCS. Sufficient research of this empirical scope required to develop theoretical framework of MCS and PE to fit with the context. Therefore, systematic combining was chosen as the research method. In order to match theory and practice of how PE investors used MCS during their ownership period, realizing capabilities, ownership and delegation of entrepreneurial judgment implied integration of additional elements into the theoretical framework. Consequently, examined empirical setting and the constructed theoretical framework formed an exceptional research on MCS and PE. The following parts will discuss limitations of the research as well as implications for theory, practice and further research.

6.1 Theoretical conclusions and implications

This research contributes to existing literature on MCS and PE by illustrating a longitudinal case of PE investor identifying opportunity, raising capital, acquiring target companies, planning a strategy and implementing it before selling assets further. Theoretically, in order to explain how PE investors use MCS during their ownership, it is worth to realize the wider setting. PE investing is often conducted by a branch of an organization that has customers as potential investors. PE investor organization has specific history, gained capabilities and

possibly a specialized approach to PE investing. All these factors have potential impact on MCS on top of actual intended strategy implementation by a specific PE fund management. This research illustrates that the concepts of MCS, capabilities approach and entrepreneurial judgment complement each other in matching theory and practice of an empirical case.

Approach above appears to be aligned with Chenhall (2003) who notes that there is no unified contingency theory in MCS research, but amount of varying theories. Thus, the author suggests that in order to realize MCS in a specific context, composition of additional complementary theories may be required. Furthermore, aforementioned author referred to "contextual variables" of organization science. In this case, additional theoretical elements of the framework were integrated by the process of matching, inherent to systematic combining. However, additional approaches are not trivial and of high context-specificity. For example, issues of ownership and delegation of judgment are not just values of certain variables, but they can be seen as variables with high universal relevance.

6.1.1 Implications for private equity literature

Counter to popular views and expectations, exceptional examples of PE investors building synergies between buyout targets were found in the case. Barber & Goold (2007) classified PE ownership as making temporary investments and influencing them. Notably, the authors illustrated a matrix where temporary and flexible ownership types were explicitly regarded as incompatible with building synergies. Only in case of regarding the whole Cleantech fund as a single unit of analysis, then synergies were not built between any other comparable investment entities. However, regarding the Asset company and the Technology company as separate units of analysis, synergies between them were built during PE ownership. Thus, the case demonstrates how PE can take other forms than stereotypical LBO associations known for the use of constraining boundary and diagnostic controls.

Wright (2001b) already suggests realizing variety of PE buyouts according to mindset and purpose. However, the conceptualization was not viable to result in a sufficient match between theory and practice. Aforementioned framework limits its scope to cover control and reconfigurations that the PE investor performs in a single target company. It does not specify sources of imagined opportunities and entrepreneurial plans. In the case, it was exceptionally the PE investment organization that originally imagined the business opportunity and started exploration of particular buyout companies with suitable entrepreneurs as complementary resources. Thus, none of the buyout types conceptualized by Wright (2001b) capture the nature

of examined buyouts. This finding has two implications. First, even when adopting the view of PE as an industry of versatile buyout types, existing conceptualizations can still constrain realization of existing variety. Second, recognized lack of suitable concepts among existing literature points the need for conceptual development. Leaning on judgment approach, investment is a capital allocation decision based on an imagined opportunity. PE investors and buyout targets can have different roles in delegation of this entrepreneurial judgment and resource orchestration. As the case demonstrates, some PE investors may originally imagine an opportunity and buy companies as complementary resources in order to implement an entrepreneurial plan. Especially dynamic capabilities such as integration, development and reconfiguration of resources capture essential aspects that can reveal substantial differences between buyouts.

6.1.2 Implications for management control systems literature

In point of view of general MCS literature, the revised framework of LOC (Tessier & Otley 2012) appears to be useful in matching MCS, PE, ownership and capabilities approaches. Especially in PE context, target companies are typically governed by an investor with a higher order strategy. Distinction between strategic and operational layers clarifies division of labor in such cases. Furthermore, by defining diagnostic and interactive uses of actual beliefs and boundaries, the revised framework appeared useful in identifying causal relations between original levers of LOC. Furthermore, whereas the original LOC defines controls with formal aspects, the revised framework identifies more implicit uses. There were examples in the case where beliefs and boundary systems were used interactively by generating shared understanding. The original LOC does not pay sufficient attention to realizing these aspects of MCS, which appeared to be yet common in the case. Simons (1995, 127-128) suggests that extensive use of MCS and especially interactive controls takes place when organization reaches maturity. Notably, this research demonstrates that examined PE investors used multiple LOC and especially interactive control for growth companies. Concepts of MCS packages such as LOC and the revised framework guided research to identify static and easily identifiable control elements. However, sufficient attention to different strategic processes and dynamic capabilities increased accuracy to identify dimensions of MCS and match theory with empirical case.

6.1.3 Implications for ownership and capabilities approaches

Common for judgment and capabilities approaches was the idea of capital heterogeneity. By matching aforementioned theoretical concepts with an empirical case, this research contributes to practical understanding of heterogeneous capital. The case illustrates that the use of MCS during ownership period was a manifestation of more abstract ownership competence. MCS was used by the fund management already when capital was raised. By communicating identified opportunity, the fund management explored investors with aligned judgment. Beliefs and boundary systems were mainly used to demonstrate the imagined opportunity to the investors with higher order judgment. The fund philosophy can be seen as a proxy for capabilities and the way strategy was intended to be implemented with diagnostic and interactive controls. Thus, MCS was used to align original judgment according to the imagined opportunity and implied derived judgment. However, it is worth to bear in mind that MCS are closely defined by intended strategy and the expected need to account for uncertainties. More theoretically, subjective nature of judgment approach implies that there cannot be one objective optimal strategy for a company. Furthermore, even against a shared strategy, there are only subjective perceptions of implementation. Thus, there can be multiple reasons to own a company for a certain time. This notion supports the view that PE industry can be seen as a variety of specialized potential value creators alongside with established industrial organizations.

6.2 Managerial implications

MCS of a single organization are not in isolation from ownership and resources. However, strength and the way these factors may influence MCS is strongly case-specific. Thus, especially when there are changes in ownership and resource base, implications on MCS should be updated. MCS in light of judgment approach would imply that consistent delegation of original judgment begins from board work, involving design of strategic MCS. Furthermore, organization needs a function that evaluates and if necessary, corrects alignment of strategic and operational layers of MCS. Inherent to PE industry, MCS may have a role already in the phase of raising capital for a specific fund. The case demonstrates how beliefs and boundary systems were used explicitly to define the imagined opportunity. Diagnostic and interactive systems were merely present indirectly, implying capabilities and a distinctive approach to PE. When stating beliefs and boundaries in similar case, it is worth to take into account that too strict design may impose constraints on unexpected strategic opportunities. On the other hand,

too unspecified and flexible boundaries may appear vague and unattractive for potential investors.

The case shows an encouraging example of the use of interactive controls in a growth business. However, interactive controls typically requiring attention from higher management have risks in a PE setting. In the case, one accountable investment director served as a remedy between strategic an operational layers. Success of the fund orchestration was highly dependent on the readiness, motivation and energy of one person. Learning effect and tacit knowledge of an interactive investment director may also bring upside potential related to synergies. PE investors that manage different companies can observe and potentially identify complementary resources over their boundaries. While being often categorized as a branch of financial sector, this thesis implies such classifications too narrow to capture the potential of PE industry. It is true that PE industry cannot be defined solely as "entrepreneurial" (Klein et al. 2013), and typical LBOs with extensive financial engineering may continue to define the industry. However, this research points an exceptional opportunity of established PE as a channel for orchestrating resources and implementing more comprehensive entrepreneurial plans.

6.3 Limitations of the research

As a single case research conducted by systematic combining, empirical findings are contingent to many specific factors that radically limit generalizability. The use of MCS by a PE fund described in the case and analysis part cannot be generalized to define the whole PE or even cleantech investments. The research question emphasized the use of MCS in PE investments. Examination of factors with potential influence on MCS was limited to immediacy of the PE fund management. Worth noting is that the use of MCS in the Asset management company (including PE funds branch) was not prioritized and, thus, not examined comprehensively. Judgment approach and dynamic capabilities were complementary and secondary parts of the framework. Aligned with this proportion, they have relatively minor role in the case and analysis part. Empirical research and data gathering emphasized MCS. For example, subjective perceptions of the limited partners as investors have not been examined. Consequently, empirical evidence does not enable comprehensive analysis of subjective judgment and motivations of limited partners.

6.4 Ideas for further research

Limitations of the research point potential ideas for further research. The use of MCS by a parent company to control PE funds activities would be a potential research space. Applying judgment approach, survey research could be conducted to identify subjective preferences of limited partner investors. Furthermore, these preferences can be linked to perceptions of different MCS. Such research would shed light on the question, if investors appreciate specified beliefs and boundaries of an investment target, or opportunistic flexibility, for example. Furthermore, some ideas for further research emerged from theory and empirical findings. As concluded earlier, further integration of capabilities approach into buyout literature could contribute to realizing and analyzing variety of PE industry. Furthermore, ownership and judgment approach could be integrated into MCS research more generally. Different settings of delegating judgment and their relation to MCS point a potential field of research.

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