TRACING CAUSES OF LOW EFFICACY OF MANAGEMENT CONTROL SYSTEMS

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Abstract

Purpose: This paper examines the causal mechanisms behind the perceived low efficacy of management control systems at the Danish e-commerce company coop.dk/shopping.

Design/methodology/approach: In a single case study, qualitative empirical data is collected through semi-structured interviews and analysed through the method of Process Tracing inspired by Beach & Pedersen (2018) to uncover the mechanisms linking causes to an outcome of low efficacy of management control systems.

Findings: We attribute the low efficacy to two mechanisms. The first is internal to the organisation. A poorly operationalised strategy is translated through an ad hoc culture with little performance measurement and several proximity issues concerning data and skills that foster daily operations characterised by negotiations rather than data driven execution. This is strengthened by the absence of a CFO as an enabling force for strategic operationalisation of data and planning. Secondly, we found responsibility and control issues in the broader supply-chain of the organisation, coupled with a poor understanding and coordination between warehousing and logistics on one side and procurement and sales on the other. This impedes productivity and fosters disagreements regarding accounting data in the supply-chain.

Originality/value: Our findings have several implications for the management at coop.dk/shopping in the future. We briefly discuss potential solutions to above-mentioned issues. Also, our methodological and theoretical approach presents a pragmatic, heuristic and novel way to analyse organisational issues, applicable for a broad range of studies. Furthermore, organisations in similar contexts may refer to our findings for a better understanding of their situation. Finally, our findings contribute to a growing scholarly understanding of management control systems in organisations by providing an intriguing empirical account evaluated through multiple theoretical lenses.

Keywords: Management control systems, coordination, structure, responsibility, strategy, knowledge & data.

Paper type: Master Thesis

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1 Introduction

Running a successful organisation depends to a large degree on the flow and utilisation of information. This is defined by the information system of the firm, of which the management control system (MCS) is a central part. So central, in fact, that the terms are often used interchangeably. The MCS ideally secures that information is in the hands of the people with the decision-making power to use it. It also controls the organisation so that information is not manipulated in unhealthy ways, and serves additional purposes related to how the organisation is structured and how the firm strategy is carried out.

For online retail companies, the timely sorting and use of data is of special importance. Data is abundant and knowing clearly where to focus efforts and resources is crucial to success. The MCS ideally facilitates this. At coop.dk/shopping, the management has an ambition to be highly data driven and in general to achieve a smoother communication flow and a more efficient value chain organisation overall. Past attempts at implementing sophisticated MCSs have been met with some resistance, resulting in the systems not delivering their desired effect. As the company enters a new phase of growth, they wonder what needs to change if they are to improve the efficacy of their utilised MCSs. This fosters the research question, which this paper seeks to answer:

Why is the efficacy of management control systems at coop.dk/shopping low as seen from a management perspective?

Efficacy here is defined as the capacity for producing a desired result or cause a desired effect. Being the dependent variable of this study, a quantitative understanding of the word was deemed insufficient due to the multifaceted realm of management accounting. Consequently, objective measures for efficacy are questionable. Rather, our attempt is to develop a more holistic discussion of causal mechanisms impacting the efficacy of MCSs in resolving complex organisational issues for management and employees in the organisation. Efficacy from the perspective of the management of coop.dk/shopping is thus primarily related to three goals: 1) more communication across the organisation, 2) a better and cheaper utilisation of resources within the organisation and 3) an organisation committed to strategic planning and execution. This has scientific value as a case study for future studies in the realm of management accounting and practical value for the organisation of coop.dk/shopping.

When discussing management control systems, we utilise a broad definition. This of course encompasses the traditional accounting tools such as budgets and reports. It also includes formalised discussions of accounting data such as sales and operations planning and business reviews. Finally, our definition encompasses the various systems of the organisational architecture, that is, how are the authority and decision rights structured, and what the measurement, evaluation and reward systems are like?

The analysis of the paper utilises the method of process tracing in focusing on causal mechanisms forming the link between causes and outcomes related to the research question. Our approach relies on a firm initial understanding of available literature, which will be synthesised to develop several theoretical lenses. These lenses will be applied in an iterative process tracing exercise with case data from interviews. Through a theoretically pluralist and agnostic approach we seek to generate heuristic knowledge on what mechanisms affect the efficacy of the MCSs of coop.dk/shopping. This will be achieved through a synthesis of theory and empirics to generate a catalogue of causal mechanisms that determine MCS efficacy.

A quick word on scope**:** For reasons of data availability we will mostly cover within-case mechanisms that are internal or procedural to the organisation. We thus take a micro level approach and will only discuss macro-level contingencies such as markets and the political environment very little, if at all.

The paper will be structured as follows: Chapter 2 features our scoping review of the management accounting literature relevant to our research question. Here the initial theoretical lenses through which we make our analysis will be crafted. In chapter 3, we will outline our critical realist philosophical foundations as well as our methodological approaches of abduction, case study research, semi-structured interviews and process tracing. Chapter 4 will present our initial understanding and assumptions of the case, as well as the central actors interviewed. In our analysis in chapter 5, we iterate through theory and empirics to reach conclusions regarding the relevant mechanisms, to be summed up and presented. Finally, we will discuss implications for practice, theory and research in chapter 6 before making the final conclusions of our paper in chapter 7.

2 Literature review

2.1 Approach

The following literature review will function as an overview of extant literature on management control systems (MCS). While the review is far from all-encompassing, it is our ambition that it may serve as a qualification for the choice of research topic and methodology. We seek to validate the review through the application of tried principles and a transparent protocol. Also, central limitations and biases will be discussed to critically asses the findings to a prudent degree.

A central distinction in literature reviews is made between the *systematic review* and the *scoping review*. The systematic review is a thorough and disciplined mapping of the extant literature with the aim of determining the best research on the topic (Pham et al., 2014). The scoping review on the other hand is generally used to discover the range, extent and nature of existing research (Pham et al., 2014). Furthermore, the scoping review seeks to funnel the research purposefully towards a qualified discussion of the question under scrutiny. The main differences between the two thus exist in their purpose and approach. While a systematic review inherits its strengths from its clarity regarding question and criteria, such clarity requires a certain expertise. It is thus an unfair endeavour for the inexperienced to embark upon a systematic review as they will inherently tend to create an overly biased review (Denyer & Tranfield, 2009). Furthermore, the purpose of this paper is to answer a highly heterogeneous question and we have therefore decided that our analysis and conclusions are better served by a scoping review. The intent of the review is not to be an answer in and of itself, but rather to serve as a *means* to achieve a robust answer to our research question (Mallett, Hagen-Zanker, Slater, & Duvendack, 2012). Some of the principles traditionally associated with a systematic review do, however, contain a degree of merit and are thus worthy of further discussion.

Traditionally, four central principles have endowed systematic reviews with scientific legitimacy; *replicability*, *exclusivity, aggregation* and an *algorithmic nature* (Denyer & Tranfield, 2009). However, these principles were developed primarily for use in the natural sciences, and they are hard to apply in the research on management and organisations, as it is highly fragmented and trans-disciplinary in nature. Evidence is often at odds and some scientific communities have trouble entering into dialogue with each other. Thus, in social sciences, it can be hard to know what we know (Rousseau, Manning, & Denyer, 2008). For these reasons we supplement the four principles with four additional ones as proposed by Denyer & Tranfield (2009): *transparency*, *inclusiveness*, *explanatory merit* and the ability to produce *heuristic* outputs.

Our review thus strives to be:

Transparent: Ideally in a review, one should strive for replicability. That is, others following a similar protocol should find similar results. This is unrealistic given the heterogeneity in methods and theories. A more manageable goal is thus to strive for transparency in how our review came to be and why certain search strings and inclusions of literature were chosen over others.

Inclusive: While exclusivity is generally favoured in the natural sciences so that only science of the highest methodological quality is included, there is an ongoing debate in the social sciences of what qualifies as good quantitative and especially qualitative research (Tranfield & Starkey, 1998). As a settlement of that dispute is far out of scope for this paper, we will instead strive for inclusiveness. Hence, literature will be added to the review when it is deemed that it adds to our understanding of the theoretical field.

Heuristic: Our review is heuristic in that it takes a pragmatic "what works" approach to discussing findings from the literature, as such will almost always require informal judgements to contextualise and apply (Denyer & Tranfield, 2009). As we wish to focus on solutions, literature will be added when it potentially contributes to the question of successfully implementing MCSs, regardless of the methodological school of thought. The later section on synthesis will then contextualise and aggregate the theories and suggestions to make them applicable for use in the analysis. As an example of this approach, two papers may have different ways to examine the effect of budgetary control on business unit performance. Both, however, may "work" in that they through scientific arguments have proven their value in an organisational setting and both will be considered when crafting the theoretical lens, through which to view empirics.

Finally, a literature review is ideally *algorithmic*. While the limits to our expertise within the field puts certain restraints on our ability to craft a proper protocol that would stand the test of rigorous scientific review, the protocol outlined below nonetheless serves to mitigate biases and provide stability in a heterogeneous and incremental process.

Through the above we seek an approach of mixed compliance and flexibility as proposed by Mallet et al. (2012). This allows us to focus on the utility of our review rather than a rigid application of protocol.

2.2 Protocol

2.2.1 Purpose and structure

The main goal of this review as stated in our approach is to create a set of lenses through which we can observe our case study theoretically. These lenses must also enable analysis and discussion of issues of MCSs relevant to answering our research question. The review is structured as an array of funnels (summaries), narrowing down broad ideas into distilled notions, where each funnel represents a subsection of the literature. We have attempted to present them in an order, which makes logical and didactical sense. This should not create the notion that they are insulated fields of study. As with most subjects within organisational literature these subfields are highly interrelated and the separation into subcategories is purely there for readability concerns.

2.2.2 Search and screening strategy

What follows are the summed-up versions of a search rooted in the literature known by the authors mainly through their exposure to accounting subjects at university. These references were but a point of departure from which a broader search was enacted. This anchoring of the literature in what was known to the authors nonetheless poses a potential bias and will be accordingly discussed in a later section of this thesis.

The vast majority of the literature screened for the review consists of academic peer reviewed papers. These were identified through references from other papers and accessed mainly through the online search engines of the library of Copenhagen Business School (CBS) and Ebscohost. On several occasions, however, the papers proved difficult to track down and Google was used as a secondary engine. Of the approximately 250 papers designated for screening, we were unable to locate only 11 through our search strategy.

The screening process started by locating relevant titles among the references of the known literature. Some papers in social science insist on having titles of a more creative nature, these may thus have been omitted despite their relevance. This bias, however, is considered a small detriment to an otherwise sturdy strategy. From the title the abstracts were screened. If the text still seemed relevant to our scoping review, we would move on to screen the conclusion. Finally, elements of the full text would be screened before the decision of inclusion was made. This process was carried out four times, each time cascading through a new set of references to references. At the end of the fourth cycle, it was judged that the search had been

exhaustive enough to facilitate a scoping review. By then thousands of references had been considered, of which 250 had been designated for further enquiry.

To organise the screening and search process we made use of the Document Mapping function of Microsoft Word and the reference organisation tool Mendeley.

2.2.3 Inclusion and aggregation principles

As touched upon in the approach, any paper that adds to our understanding of MCSs in organisations or contributes to the theory in a relevant way is included in our review, regardless of the methodological approach or epistemological underpinnings. That being said, the limited remit and the funnelling purpose of the scoping review must be considered. Therefore, while alternative, critical or creative scholarly contributions will be discussed, their fields were not actively pursued in depth. This pragmatic approach is sought to bridge the twin desires of including contributions from other schools of thought while avoiding a cumbersome struggle of theories outside the scope of this paper.

A similar approach is applied in terms of aggregation. Here a piece of literature is included if it adds significant novelty to the argument strings. This is within the vision of our scoping review and is a necessary precaution to cope with the tendency of the MCS literature to test several issues in multiple ways with miniscule variations. Thus, while there for example may be a throng of work of the effect of participation on the budgetary process, these have been aggregated and will in the review be represented by only a few select papers. This selection is somewhat arbitrary and is mostly carried out to serve the readability of this paper.

2.3 Summaries

The following section will present summaries of our review in different sub-sections and will result in a synthesis of our scoping review into several concrete and testable statements, which will be the lenses through which our case study will be carried out.

2.3.1 Organisational structure

The first funnel of literature is that concerning the organisational structure. This includes the levels and nature of hierarchies and the degree of decentralisation.

The information system and the organisational structure

A central function of accounting systems is to serve as information systems across the firm. The system is capable of producing external reports for external stakeholders, and internal reports, mainly used for purposes of shaping decision making and control within the organisation (Zimmerman, 2017). The system distributes resources and with resources comes decision-making power. Thus, the system is also a central vehicle for decentralisation. Furthermore, as knowledge creation is another aspect of a functioning accounting system, where that knowledge is directed also plays a role in where decision rights are placed (Zimmerman, 2017). Another way of framing this is that the accounting system distributes influence within the structure. The system can thus modify decision-making processes and alter social structures (Bariff & Galbraith, 1978). The hinted relation between accounting systems, the organisational structure and behaviour has indeed been shown for budgets (Bruns & Waterhouse, 1975), allowing for the argument, that this is likely true for other accounting systems as well.

Coordination

The ability of a system to communicate knowledge, inherently assumes an imperfect knowledge-stream within the structure. This may lead to *integration problems*, which are coordination problems where workers have a need to communicate with each other (Lazear & Gibbs, 2015). Thus, communication is troublesome and costly and should be avoided when the returns of specialisation outweigh the costs of communication (Bolton & Dewatripont, 1994). The information system plays a role in remedying these issues through its role in defining central planning, training and communication. Indeed, knowledge gained from intrafirm networks is crucial for the daily performance of the average employee. When the employee taps into this network he develops connective capital for the firm, a process facilitated by the information system (Ichiniowski & Shaw, 2009). The systems furthermore have the ability to provide a fast and redundant upwards flow of information and thus reveal the assumptions of others to the superiors with decision making power (Bariff & Galbraith, 1978).

Divisions

A central issue with the information system of a firm is the trade-off between centralisation and decentralisation; vertically, in hierarchies, and horizontally, in divisions. While decentralisation has been found to be positively related to information asymmetries it has also been shown to limit intrafirm interdependencies (Abernethy, Bouwens, & van Lent, 2004). This suggests that while information may be skewed by decentralising, the decentralised units are relatively more autonomous than their merged counterpart. The use of

performance measures can mediate the interdependencies, suggesting that decentralisation and a performance measurement and incentives (PMI) systems are somewhat complementary (Abernethy et al., 2004). Adding to that, the structuring of activities was in another study by Child (1973) associated with higher levels of conflict and had hardly any connection to conforming behaviour. Also, as hierarchies expand, wage scales and effort levels tend to decrease at the lower levels, whereas they increase at the top. Centralisation on the other hand could aid in conforming behaviour, but cannot mediate conflict (Qian, 1994). A common form of decentralisation is that of the divisional structure. These are often controlled through accounting systems when their impact on other decisions is high (Keating, 1997). Decision rights are then distributed through the divisions according to their relative expertise (Baiman, Larcker, & Rajan, 1995).

Structural problems

Besides the trade-off between the relative benefits of centralisation versus decentralisation, there are several other problems related to firm structure. Among these are 1) the free-rider problem, the tendency of workers to slack, when their output cannot be accurately measured, 2) empire building, the tendency for managers to engage in value destroying expansion of their mandates when not properly monitored and 3) influence costs, which are the costs of employees trying to influence managers in unhealthy directions for their personal gain (Zimmerman, 2017). While simple restructuring is mentioned as one way of getting around these issues (Zimmerman, 1997), others mention that it is not sufficient and that more wholesome approaches are needed (Waterman, Peters, & Phillips, 1980), and that the nature of the clientele served by the structure and control system is important (Ouchi, 1977). Additionally, supervision can expand what can be achieved through restructuring (Calvo & Wellisz, 1978).

Synthesis

Overall, the literature suggests the following relations between management control systems and the organisational structure:

- The management control system interacts with structure to shape behaviour.
- The management control system interacts with knowledge to facilitate coordination.
- The **management control system** mediates vertical (hierarchies) and horizontal (divisions) **structural issues**.
- The management control system defines and constrains the organisations ability to restructure.

Together these suggestions form our first lens, ***the lens of structure*** through which we shall view our case.

1. Lens of structure

- The **management control system** interacts with **structure** to shape **behaviour**.
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- The **management control system** defines and constrains the organizations **ability to restructure**.

2.3.2 Decision making

As mentioned, internal reports created by the accounting system often have the purpose of separating decision making and control.

Controllability

Central to the notion of decision power and the distribution of decision rights is the *controllability principle*, that is, managers should only be held accountable for what they can actually control (Zimmerman, 2017). Thus, for a proper organisational architecture, which controls behaviour through partitioning decision rights and rewarding & measuring performance, managers cannot be measured for the happenstance of assets for which they do not hold the necessary decision rights. Jensen & Meckling (1995) discuss how the fact that managers rarely have the power to alienate assets creates control issues within the firm. One substitute to this is proper partitioning of decision rights; another is to create a control system. Sometimes, however, especially when uncertainty is high, a rigid measurement system can cause dysfunctional behaviour (Hirst, 1981), suggesting that proper attention to decision rights is always prudent. Some scholars points toward the notion that the controllability principle can be mediated by means other than MCSs, such as role perceptions (Burkert, Fischer, & Schäffer, 2011).

Externalities

Imperfect control systems will cause actions with repercussions for others, violating the controllability principle. Such violations are dubbed *externalities* and the MCS ideally insulates the individual actors from

them (Zimmerman, 2017). Several ways to combat such externalities are suggested in the literature, such as central planning and the use of non-financial performance measures, although such behaviour can cause new externalities (Hansen, 2010). In fact, in actor-network theory (ANT), it is acknowledged that externalities can *never* be internalised as such attempts will always create new externalities (called overflow in the ANT literature). The question is then whether the overflow is causing a hot or a cold situation based on the ease with which agreements can be met (Callon, 1998). Accounting systems appear to have a crucial role through their distributive power, whether for internalising externalities, if at all possible, or in mediating hot/cold situations.

Authority

Another point of discussion with relevance to the decision powers granted to managers by the MCS is that of authority. Aghion & Tirole (1997) distinguish between *formal authority*, the right to decide, and *real authority*, the effective control over decisions within organisations. While formal authority is highly dependent on the distribution of decision rights through accounting systems, real authority is determined by the full information structure. A manager may increase the initiative of an employee through granting him additional real authority, but this come at the cost of reducing his own control. Typically real authority is determined by factors such as overload, lenient rules, urgency of decision, reputation, PMI systems, the multiplicity of superiors, and communication (Aghion & Tirole, 1997). While some of these are deeply rooted in the MCS, some of them are not. In fact, some scholars argue that set accounting systems are a detriment in today's environment, arguing instead for a continuous process highly dependent on managerial discretion. This is claimed to both empower and impose strict accountabilities on managers (Frow, Marginson, & Ogden, 2010). The empowering of managers is a contested issue, as it comes with a discussion of monitoring. Some warn against empire building (Zimmerman, 2017), whereas others warn of managerial slack and a loss in productivity and profitability (Bertrand & Mullainathan, 2003). Also, discussing authority in terms of power is a highly politicised issue in the literature, as definitions and approaches to power differ to an absurd degree and great care should be taken in discussing power in an academic context. Hindes (1982) distinguishes between power as the outcome of capacity, where an agent uses her own capacity to secure the power, and power as systematic, where structures and systems exclude certain interests from power. While Hindes himself argues that both are grossly oversimplified, we see some merit in discussing them in terms of accounting, where it assigns decision rights (capacities) to agents and shapes the organisational architecture (systematic) to empower certain interests. These can be related to the formal and real authori-

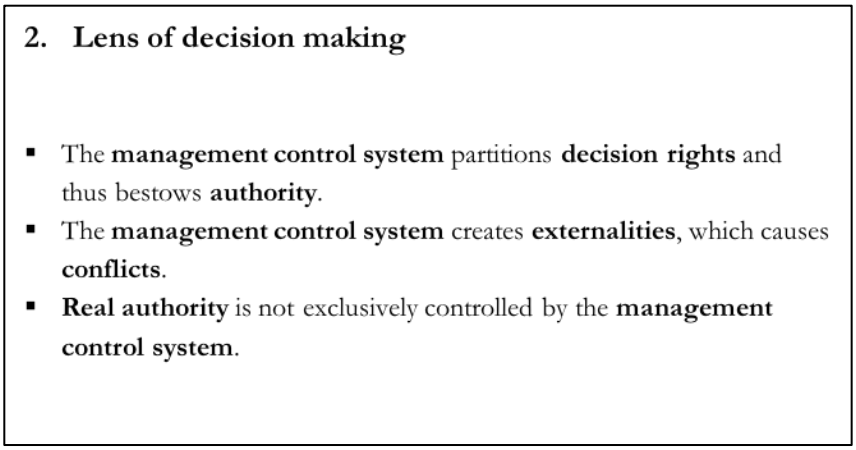
ties of Aghion and Tirole. Consequently, we will henceforth use these ideas when discussing the authority endowed by or absent from management accounting systems. While we recognise that this is rather simplistic, it was deemed necessary due to our commitment to a heuristic outcome of this review.

Synthesis

Overall, the literature suggests the following relations between management control systems and the distribution of decision rights:

- The **management control system** partitions **decision rights** and thus bestows authority.
- The **management control system** creates **externalities**, which causes conflicts.
- **Real authority** is not exclusively controlled by the **management control system**.

Together these suggestions form our second lens, ***the lens of decision making*** through which we shall view our case.



2.3.3 Performance, measures and behaviour

One framework for organisational control is given by Flamholtz, Das & Tsui (1985). In their framework, four mechanisms of control are discussed: planning, measurement, feedback and reward. While future sections will handle feedback and planning, this funnel discusses the literature on measurement and reward.

Measures

Measurement is an important part of any accounting system. As any such system consists of numbers, one could argue that their mere existence fosters measurement. It is dubbed one of the three legs of the organisational architecture (Zimmerman, 2017) and is a primary complement of decentralisation, thus also affect-

ing the organisational structure (Abernethy et al., 2004). While some argue for optimal contracts as the main structure used to guide and measure performance, they have been shown to be second best to well-crafted information systems (Holmstrom, 1979). Hansen (2012) discuses various elements of performance measurement (PM) systems. He introduces four criteria: distortion, risk, manipulation and measurement costs, which should be the units of consideration when designing a PM system. Distortion is the inherent pushes and pulls between tasks created by the PM system. If you measure an employee on speed, he is pulled towards improving that. This pushes him away from other tasks such as quality. If this destroys value, the measure is distorted. Risk and manipulation is how the PM system distributes risk among employees and to what degree it fosters manipulative behaviour such as moral hazard or influence activities. He furthermore distinguishes between multidimensional, collective, subjective and relative measures and targets (Hansen, 2012). This is interesting as more and more companies are moving away from traditional financial measures towards a broader palette of measures (Eccles, 1991) such as the Balanced Score Card (BSC). This might pose a huge benefit as scholars have shown how non-financial measures can encourage cooperation across divisions (Baiman & Baldenius, 2008) and help internalise externalities (Hansen, 2010). However, such approaches also have critics. Jensen (2002) argues that multiple measure systems such as the BSC give a muddied picture and that a single score linked to firm value should be pursued instead. Others point towards how intricate systems will be manipulated by the managers and employees to their own benefit through behaviour such as smoothing, gaming, filtering, biasing or illegal acts (Birnberg, Turopolec, & Young, 1983). The measures may finally have an effect on participation in systems, feedback regarding participation and authoritarianism (Foran & DeCoster, 1974).

Goals & targets

One aspect of a PM system is targets and goals. Some have found that specific and challenging goals lead to higher performance than easy goals, "do your best" goals and no goals (Locke, Shaw, Saari, & Latham, 1981). Goals are said to direct attention, mobilise effort, increase persistence and motivate strategy deployment. The same authors state that a good goal is specific, rewarded, supported by management, given feedback upon, accepted by the employee and is possible to achieve for the employee (Locke et al., 1981). Others have pointed towards a negative relationship between target achievability and performance, stating that tight but achievable targets should be the high watermark. Employees, however, are motivated to bargain for targets, which are easily achieved (Merchant & Manzoni, 1989). Also, the influence of external factors and the level of uncertainty determines the effectiveness of goals and the attitude towards them

(Hirst, 1987; Merchant & Manzoni, 1989). Some are critical towards the use of measures and targets. Deming (2000) dubs the evaluation of performance and the management by visible figures *deadly diseases* of management. He calls instead for an elimination of standards and a commitment to continuous improvement. While the merits of measuring are thus a contested issue, scholars can at least agree that it has some effect on employee behaviour.

Motivation

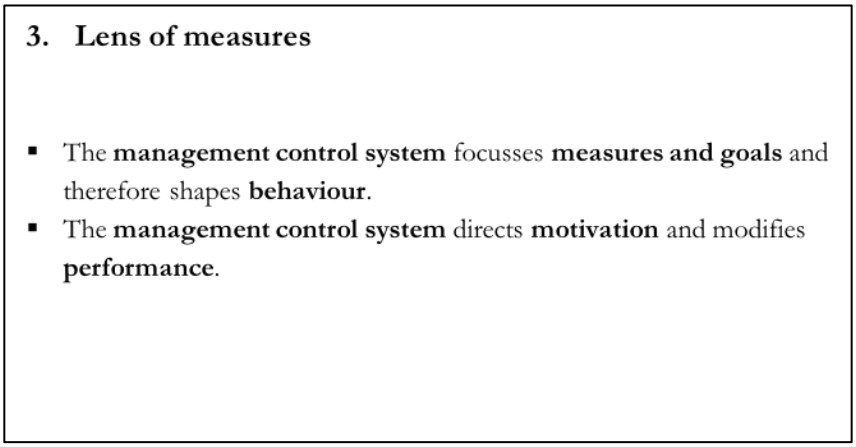
A central reason for discussing measures and targets is their ability to affect motivation (Lazear & Gibbs, 2015). As stated above, achievable targets will drive performance as the employee is motivated by the potential reward (Merchant & Manzoni, 1989). It may also be affected by other things. Some claim that the level of innovation, for example, increases with higher executive compensation (Holthausen, Larcker, & Sloan, 1995). The opposite of course also holds, people may have trouble collaborating when the reward is not structured in a way that secures equity (Ouchi, 1979), or they may slack if they expect no consequences of failing to improve measures (Kornai, 2009). Other scholars speculate that extrinsic rewards are not all that matters to employees. Ryan and Deci (2000) distinguish between *extrinsic* and *intrinsic motivation*. Where extrinsic motivation is driven by "external" financial gains, intrinsic motivation is facilitated by more personal, less tangible phenomena such as creative expression and pride. Others have suggested that workplace trust and other measures of workplace social capital are very important for employees, showing compensating differentials for social measures versus wages so large, that they suggest a current disequilibrium (Helliwell & Huang, 2005).

Synthesis

Overall, the literature suggests the following relations between management control systems, measurement and motivation:

- The **management control system** focuses **measures and goals** and therefore shapes behaviour.
- The management control system directs motivation and modifies performance.

Together these suggestions form our third lens, ***the lens of measures*** through which we shall view our case.



2.3.4 Planning, implementation & change

Having discussed how accounting systems can modify the structure, decision making and performance of an organisation, we now turn toward a more internal approach to the systems. This section will touch upon their interplay with strategy, how they are prepared and designed, and how they are implemented.

Strategy & planning

Ittner & Larcker (2001) discuss how accounting has moved from its roots as a financially oriented tool for decision analysis and control into a strategic tool focused on delivering shareholder value. This new purpose, which they coin *value-based management* focuses on the design, implementation and alignment of strategy & accounting systems toward increased value creation. To use accounting systems as a strategic device seems a natural evolution considering its other constituents. Scholars have for example shown that while both goals and strategy have an effect on performance, the effect of strategy is stronger (Chesney & Locke, 1991), hinting at a large potential for a synthetic system. Strategies have furthermore been shown to shape motivation (Roberts, 2004), not unlike accounting systems. The argument has furthermore been made that accounting statements themselves can be seen as actors in a strategy implementation process, overpowering even powerful managers through their abilities to structure and delegate (Skærbæk & Tryggestad, 2010). Finally, the importance of the managers' perception in influencing the relationship between MCSs and strategy has been highlighted. It is here criticised, that research has traditionally focused on central management, neglecting the lower operational units, which are the ones carrying out the strategy on a daily basis (Langfield-Smith, 1997).

The purpose of MCSs

A large part of the accounting system's role in enacting strategy and shaping the organisation stems from its use and purpose. Simons (1994) discusses how accounting systems are used by managers to formalise beliefs, set boundaries for behaviour, debate and discuss strategies, overcome inertia, communicate strategies and ensure attention to strategic initiatives. Other scholars have pointed towards the role of the accounting systems in assigning decision rights, measuring performance, setting goals and coordinating information (Zimmerman, 2017), keeping score, directing attention and solving problems (Birnberg et al., 1983), focusing attention towards uncertainties and guiding strategic development (Simons, 1991), and acting as a destabilising document to foster initiative and stimulate organisational curiosity (Hedberg & Jönsson, 1978). The role of accounting information systems can largely be separated into two groups. They either act as diagnostic systems, providing advice to actors, or they act as interactive systems, acting as a device of dialogue and information sharing (Friis & Hansen, 2015; Simons, 1991). Traditionally, diagnostic systems have been used to implement strategies, but this might change going forward (Simons, 1991). Participation may mediate this discussion as a diagnostic system crafted with participation should still enhance strategic dialogue in the organisation, thereby interactively controlling strategy (de Haas & Kleingeld, 1999).

The design of MCSs

Regardless of the intended use of MCSs, contingency theorists have highlighted that the ideal design is heavily dependent on organisational and environmental specificities (Birnberg et al., 1983). These contingencies include the external environment, the technology, the organisational structure and size, and the strategy (Chan, 1979; Chenhall, 2003). Decentralisation for instance, has been associated with a preference for aggregated and integrated information, whereas organisational interdependence has furthermore been associated with a preference for a broad scope (Chenhall & Morris, 1986). A highly decentralised and interdependent organisation should thus design its accounting systems with some care. Other criteria that mould the control systems are *goal congruence*, *behavioural relevance* - are the relevant behaviour and goals covered by the system, *behavioural validity* - does the system lead to the behaviour it claims to lead to, and *behavioural reliability* - the extent to which the system produces the same behaviour over and over (Flamholtz, 1979). Finally, the system must take into account where the information is located in the system (Zimmerman, 2017). These internal factors suggest an interactive relationship where the organisation and the accounting system are shaped by each other.

Implementation of MCSs

While firms may hold lofty strategies of new technologies and innovation, the transformation into accounting systems is often how they are actually organisationally sedimented (Mouritsen, 1999). That is, planning is all well and good, but implementation is what matters in the end. Kotter (1995) outlines a rather simplistic approach to such an implementation process and highlights the importance of establishing urgency, forming a coalition, communicating properly and removing obstacles. Another view is to analyse how accounting shapes an organisation. In an implementation process, the notion that accounting is heavily associated with a particular way of seeing and shaping an organisation is of importance, especially when opposing views exist (Hopwood, 1983). These differing views may create resistance and system difficulties through aggressive or defensive behaviour (Christiansen & Skærbæk, 1997). Overall, the accounting system may be too easy for opposing agents to manipulate, especially when inconsistencies with the normal distribution of power, the dominant organisational culture and shared judgements on technology and goals are inherent in the MCS (Markus & Pfeffer, 1983). As these difficulties are mostly structural, process based strategies such as user involvement are often largely ineffective in overcoming them (Markus & Pfeffer, 1983).

Alternatively, it has been found that local effort cannot simply replace central instructions; managers must make the strategies come into their own through their everyday actions (Ahrens & Chapman, 2005). Overall, manipulation of data may be a viable strategy to overcome some of these difficulties, but only when implementing a strategy, not when formulating one (Merchant & Shields, 1993). This can conflict with the tendency to overly focus on purely financial measures in implementation even though non-financial measures are considered in formulation (Bhimani & Langfield-Smith, 2007). Finally, the presentation format matters when implementing accounting systems. It is found that users with low knowledge of accounting prefer graphical presentations, whereas users with high accounting knowledge prefer tabular presentation formats (Cardinaels, 2008).

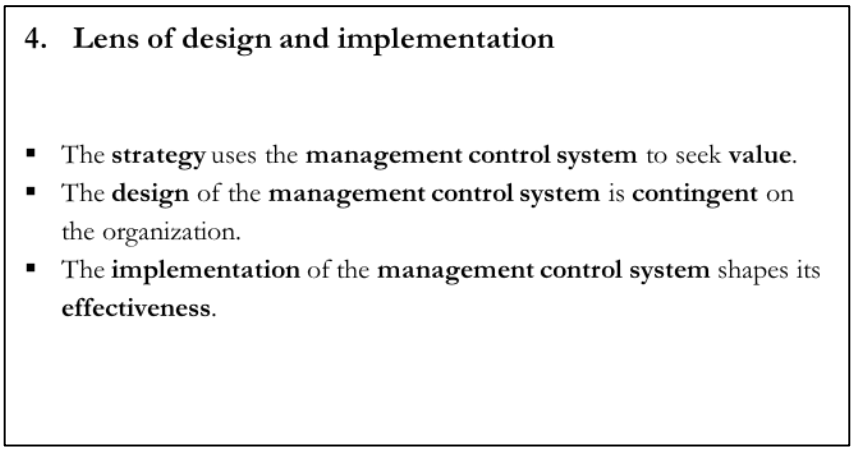
Synthesis

Where the past sections have mainly focused on how the accounting system changes the organisation, this section has shown how the strategy and other organisational factors have an influence on the design and implementation of the management control system. The following relations were suggested:

- The strategy uses the management control system to seek value.

- The **design** of the **management control system** is contingent on the organisation.
- The implementation of the management control system shapes its effectiveness.

Together these suggestions form our fourth lens, ***the lens of design and implementation*** through which we shall view our case.



2.3.5 People

The following section discusses the relationship between the accounting system and the people of the organisation. While previous sections have of course also touched upon such issues, this section specifically delves into the effect that the accounting system has on the relationships between people in an organisation.

The manager

The manager has a huge influence on the information system of the firm. One additional driver of motivation apart from a PMI system and the strategy, is that of the reputation of the leader (Roberts, 2004). The manager's perception of strategy and the MCS is also vital in how it is implemented (Langfield-Smith, 1997). His leadership style also matters, as it may be very *budget constrained*, where accounting is used too rigorously to the detriment of personal relations, fostering manipulation. Alternatively, he can take a *non-accounting* style, which is too indifferent to accounting information. A bridging style to strive for is that of the *profit-conscious* style, where accounting information is used, but in a sufficiently flexible way (Macintosh, 1992). Following that argument, certain leadership styles combined with budgetary participation, can have strong positive effects on performance and job satisfaction, whereas other leadership styles exhibit the opposite effect (Brownell, 1983). Yet others have linked role conflict and ambiguity not to the delegation of

decision rights, but to leader behaviour (Rizzo, House, & Lirtzman, 1970). An argument can also be made that the accounting systems should be moulded to suit the managers that use them. As managers deal with words, the words of accounting should be a focus point (Jönsson, 1998). Furthermore, some describe decisions not as endings of a process, but as promises of new beginnings. The role of the MCS is thus to enable managers to make such promises (Mouritsen & Kreiner, 2016). Finally, it should be noted, that accounting systems can only do so much. They will not make ineffective managers effective in the end (Mirvis & Lawler, 1983).

Culture and employees

Many scholars also discuss the impact of corporate culture on the MCS. While it was a part of our contingency discussion before, it also deserves mention here, as cultures are formed between people. Guiso, Sapienza & Zingales (2013) studied the impact of corporate culture on performance and found it largely irrelevant. However, the perception of management ethics and trust were important. Others take another stand and highlight various ways in which accounting can shape the organisational culture through the rational symbolic value of gathering and managing by information (Feldman & March, 1981), changing the view of ideology and legitimacy in a culture and fostering creativity and innovation (Cooper, Hayes, & Wolf, 1981), and facilitating social control (Mirvis & Lawler, 1983). Finally, all the individual actors may use the MCSs in different ways to shape the system. They can use them in political ways to gain new ground or protect ground already won, or mask the true political motives through a rational façade (Franz & Robey, 1984). They can also use the systems to "thank" each other, or ensure their peers that steps are being taken (Mirvis & Lawler, 1983). Furthermore, the systems can also be used for blame allocation. Davis & Davis (1972) distinguish between internals and externals as to whether they put the blame for failure (or success) on personal or impersonal forces. Employees will also use the system to delegate upwards, though only when they are overloaded (Bolton & Dewatripont, 1994).

Synthesis

Overall, the literature suggests the following relations between management control systems and the people of an organisation:

- The **managers** and their behaviour impact the way the **management control system** is integrated into the organisation.

- The employees interpret and use the management control system through culture and symbolism.

Together these suggestions form our fifth lens, ***the lens of personal relations*** through which we shall view our case.

5. Lens of personal relations

- The **managers** and their behaviour impacts the way the **management cost system** is integrated into the organization.
- The **employees** interpret and use the **management cost system** through **culture and symbolism**.

2.3.6 Critical perspectives

The theories outlined above mainly derive from the traditionally strong rationalist approach to management accounting systems and organisational architecture. There are, however, valuable contributions from some of the alternative schools. In line with our principle of inclusion, these are presented in this section.

First, a non-rationalist design school exists. This champions the idea that goals are unclear and unstable. A continuous dedication to improvement and value-creation is thus more effective than the often destructive tendency to measure and constrain (Baxter & Chua, 2003; Deming, 2000). Alternatively, one could use an ethnographic or naturalist approach where the case is studied in the everyday organisational habitat. This is arguably more practical and results are emergent and based on people in their organisational environment and how actors choose what to do (Baxter & Chua, 2003; Jönsson & Macintosh, 1997). Another alternative comes from institutionalism. Here the accounting change is the object of scrutiny, as well as the ongoing relationship between actors and institutions, and how the existence of routines shapes management accounting change (Burns & Scapens, 2000). It is very powerful when the management accounting system does become institutionalised, and the critique is that traditional theories often neglect to properly discuss how new things become embedded in organisations. This fractures several power assumptions as the fact then stands that managers may have the power to propose new things, but the employees have the power

to stick to old routines (Burns & Scapens, 2000). A more soft approach is that of structuration, where individuals still reproduce structures, but powerful actors do have the potential to create change (Baxter & Chua, 2003).

Another alternative approach is that of Actor-Network-Theory. Callon (1984) concerns himself with translations, which are the processes where change takes place. Here, issues are problematised in the moment of problematisation. Actors are locked in their roles in the moment of interessement, these roles are defined and interrelated through the moment of enrolment, to then be mobilised in the moment of mobilisation. A central tenet is that non-human objects can be actors and exert *performativity*, the notion that frameworks such as MCSs not only describe realities, but also enact them. An accounting system may thus be endowed with quite a bit of agency (Themsen & Skærbæk, 2017). Chapman, Chua & Mahama (2015) utilise the explanatory power of this notion in their defence for ANT in explaining the move from strategy as something organisations *have*, into something people *do* in organisations.

Ansari & Euske (1987) tested the rational model against a socio-political and institutional model and found little explanatory power for the rational model regarding MCSs. Why not discard it all together then? Why spend so much of this review on it? That is due to the plethora of studies supporting the rational approach, many of which are reviewed above. A blatant dismissal would be borderline arrogant, and we chose instead, in line with our epistemology and methodology explained in the following sections to supplement it with critical approaches. While some would argue that this is scientific sacrilege, it is safely within the boundaries set by our heuristic "what works" approach and our critical realist epistemology.

This gives us the final ***lens of alternative approaches*** through which we shall view our case.

6. Lens of alternative approaches

- The **non-rationalist design school** highlights uncertainty and proposes a commitment to continuous improvement over rigorous **management control systems**.
- The **ethnographic school** turns away from predictions and looks at everyday contexts of **management control systems.**
- The **institutional school** states that **management control systems** are impacted by collective behaviour and socially generated rules.
- The **actor-network** approach tells us that **management control systems** can enact the reality they describe.

2.4 Synthesis

The above presented several funnels of literature, scoping it into six lenses, which will be used to design our interview guides and in term to process, analyse and discuss our case study with the goal of answering the research question: *Why is the efficacy of management control systems at coop.dk/shopping low as seen from a management perspective?* Most of the separations into subsections made above were done mostly for readability and structure. Henceforth, we shall loosen this assumption quite a bit, discussing structure, measures, decisions, people and implementation in a varied, interchangeable and integrative manner. Multiple lenses may thus be utilised simultaneously when it fosters understanding, though we will try to uphold the separation when possible as it bestows chronological organisation to our analysis, ultimately satisfying disseminative desires. Yet, while the MCS certainly modifies and is modified by the organisational structure and the delegation of decision rights, these two elements of the organisation also interrelate with one another. This is only one example of the underlying interactive nature of the lenses. We have so far presented the six lenses roughly this way:

- The MCS and the **organisational structure** have an interdependent relationship.
- The MCS and the **organisational decision-making processes** have an interdependent relationship.
- The MCS and the **performance measurement and incentives system** have an interdependent relationship.
- The MCS and its **planning and implementation** depend on various procedural and organisational factors.
- The MCS and the **personal relations within the system** have an interdependent relationship.
- **Multiple scholarly perspectives** reveal different aspects of the MCS in its organisational context.

A more wholesome presentation of how this will finally be reflected in our case study is shown in figure 1:

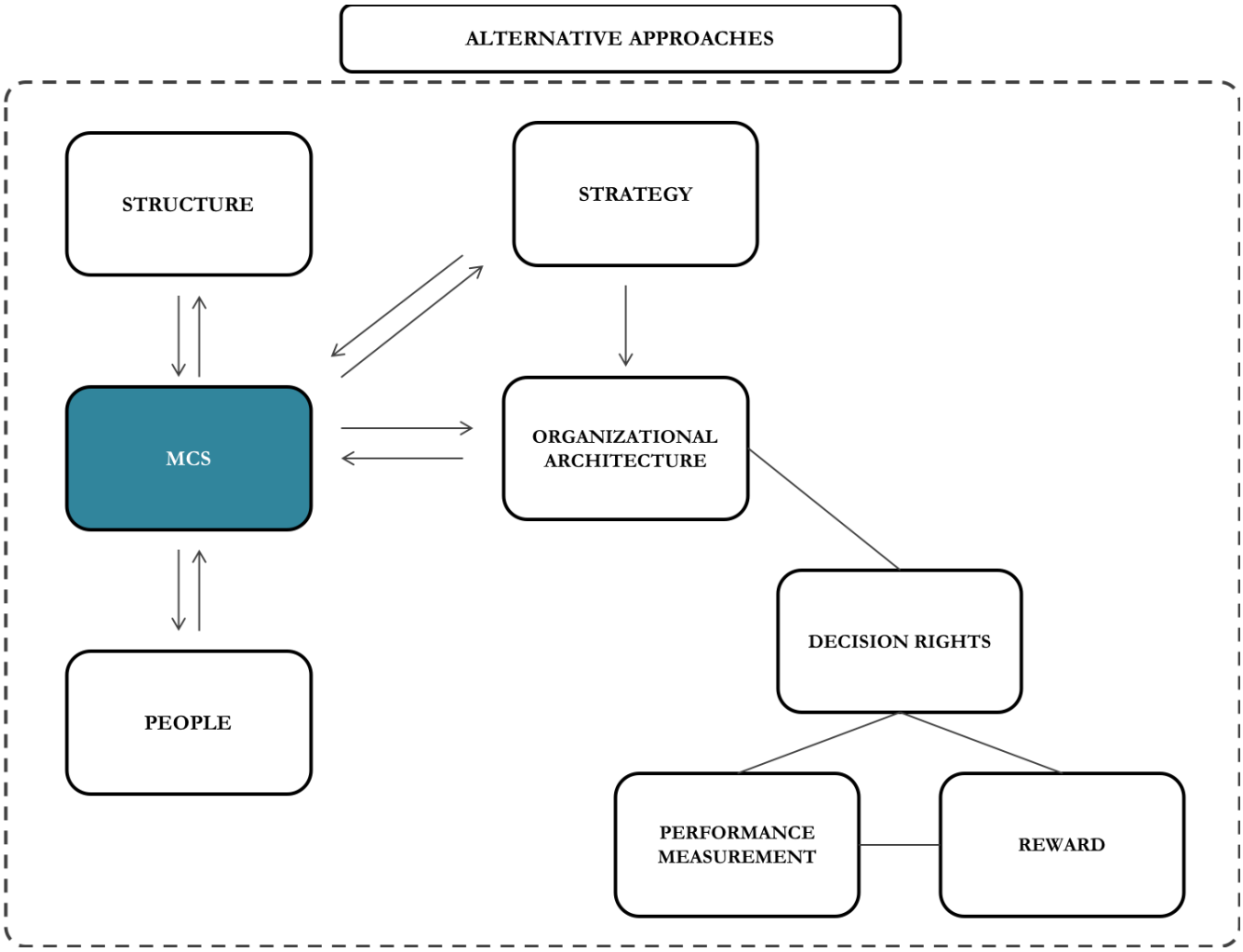


Figure 1: Theoretical lenses

This framework is the result of a multidimensional scoping review with elements of the de-biasing qualities of a systematic review. We thus argue it a proper theoretical basis for the following case study.

2.5 Limitations & biases

While we ultimately argue that our protocol and approach are sturdy enough to qualify the above review prudently, there are several potential biases and limitations that should be mentioned concerning the review process.

One potential bias stems from the fact that we took our starting position in literature already known to us. Mallett et al. (2012) argue that this reproduces any theoretical bias inherent in that literature and indeed in us throughout the review. This was a necessary choice due to our sheer inexperience in the field, and both

our starting position and our protocol could have benefited from an expert review as quality control. Another benefit of including an expert would be to minimise retrieval bias, the possible error inherent in an inadequate or incomplete search (Durach, Kembro, & Wieland, 2017). These problems are, however, somewhat mediated by the purpose of our review, which is to inform and guide our case study, and not to be the final step in a knowledge creating process.

Our inclusion criteria might also be subject to bias, which is potentially grave, as relevant literature might not be included. This is tough to completely eliminate at our level of expertise, so we attempt to combat it through a rigorous commitment to honesty and transparency in how the review came about (Durach et al., 2017). Another set of biases is related to the collaborative nature of this paper. Even with a well-crafted protocol, the fact that multiple people participated in the review means that we might have interpreted the selection criteria differently (Mallett et al., 2012). Ironically, this bias somewhat mitigates both the selector bias – subjective inclusions affected by authors personal perceptions – and expectancy bias – the synthesis being influenced by the researchers conscious/unconscious expectations (Durach et al., 2017). As multiple authors worked on the review, any strong subjective biases should have been mitigated by the interaction with the other author. This process also mitigates the problem with interpreting the protocol differently. We have sought to discuss our approach prudently and iteratively throughout the process, and thus argue that we have taken the necessary precautions to minimise above biases.

Finally, a central limitation is found within the balance between the depth and the breadth of our review (Pham et al., 2014). We chose a deep approach with regards to much of the classical literature, while focussing more on breadth with regards to the alternative approaches. This was a necessary choice due to limited scope and remit, but it does indeed bias our results towards the former theoretical aspects. It is our desire to be as transparent about this as possible and we argue that it is within our heuristic approach to do so. So, the above should be seen as an attempt at achieving the flexibility of a deep understanding of classical management accounting theory put in perspective by a broad knowledge of alternative theoretic thought.

3 Methodology

As good social scientists we should strive to be clear about the philosophy of science that lays the grounds for our research. It is something we cannot escape, as everything we do originates from some basic understanding of the world. By providing clarity about this basic understanding, we can facilitate a conscious discussion of our research with others and with ourselves. In this we aim to be reflexive, which includes a reflection on the choice of methodology and methods, and why they are preferred over others.

In this manner, this chapter outlines and discusses the philosophy of science and methodological foundations that structure and guide the work of this thesis. In section 3.1 our ontological and epistemological assumptions and key features of critical realism are elucidated. In section 3.2 our approach of methodological reasoning in the form of abductive analysis is described, followed by section 3.3 that presents the chosen case-study design. In section 3.4 our methods and techniques are presented, namely process tracing and semi-structured interviews. The overall approach is summarised in section 3.5.

3.1 Philosophical considerations

To establish a clear standpoint on how our implicit understandings of the world shape how we conduct ourselves in this study, we now outline some basic assumptions and key features of the philosophy of science of critical realism. Our approach to this leans heavily on the approach presented by Sayer (2000).

At its core, critical realism distinguishes between the 'intransitive dimension', a real world that exists independently of whether we observe or know about it, and the 'transitive dimension', our knowledge about the world (Sayer, 2000). The intransitive dimension corresponds to ontology, the theory of being, and the transitive dimension refers to epistemology, the theory of knowledge. The two dimensions are clearly divided: the real world exists independent of our knowledge of it, and changes in our understanding and interpretations of the world do not necessarily lead to changes in the real world itself.

The critical realist *ontology* is deep and stratified. That means that there is an underlying level of structures and mechanisms giving rise to phenomena whether or not they are observable (deep), and that these structures and mechanisms are organised in strata in order of increasing complexity (stratified). Furthermore, new phenomena arise from the conjunction of two or more existing phenomena, emerging from lower strata to higher ones. For example, an organisation and an accounting system (lower strata) may in conjunction create a specific structure (higher stratum). Also, reality consists of objects with interrelated struc-

tures that give them causal powers or liabilities to act or be acted upon, and whether these causal powers are activated depends on context and external contingencies. Furthermore, reality is not a closed system where empirical regularities are likely to be sustained over time. Rather, it is an open system. This means that the same causal powers can have different outcomes, dependent on the context in which they are activated, and different causal powers can have similar outcomes, for the same reason (Sayer, 2000).

Regarding agency and structure in the social world, the view is that humans are actors with causal agency; however, they are positioned within existing social structures that enable and constrain their actions, and they produce and reproduce these social structures. Reality is thus subjective, but also influenced by material contingencies. Furthermore, many things happen outside of the awareness of actors and there are unintended consequences to be accounted for. Lastly, as social phenomena change over space and time, it is important to conceptualise and describe the individual observation clearly to make transparent what is being observed and analysed.

This ontology carries some implications for *epistemology*, which will now be discussed to explain how we view the creation of scientific knowledge. On a general level, the open world of social life implicates that it is hard to establish general laws, and social science is therefore best used to establish concrete, albeit contextual knowledge (Flyvbjerg, 2006). Moreover, we hold the epistemological view that knowledge is fallible, meaning that we never know with certainty whether what we find is true, and it is relative, meaning that our interpretation of a phenomenon may differ from that of others. Also, knowledge is a social product as it is subjective and informed by theory; our interpretations are thus heavily influenced by preconceptions formed by theory and cultural influences. Also, the world we interpret is an already interpreted one. This *double hermeneutic* (Noorderhaven, 2004) is important to consider so that one can account for and critically assess shared ideas and established meanings, and change or discard those if they turn out to be weak.

A central tenet of critical realism's explanatory element is causal analysis. It is carried out not through the identification of empirical regularities, but rather by identifying the causal mechanisms that give rise to certain outcomes, and how and under what context these mechanisms are activated (Sayer, 2000). Explaining the existence of such a mechanism is done by investigating the underlying structures and objects that carry that mechanism or causal power. Another important aspect is that structures and mechanisms need not be directly observable for arguing for their existence. They can be inferred based on observations that would

only be possible, given their existence (Sayer, 2000). Also, it is important to note that there is rarely only one mechanism at play as multiple conjectural mechanisms often drive a certain outcome (Sayer, 2000).

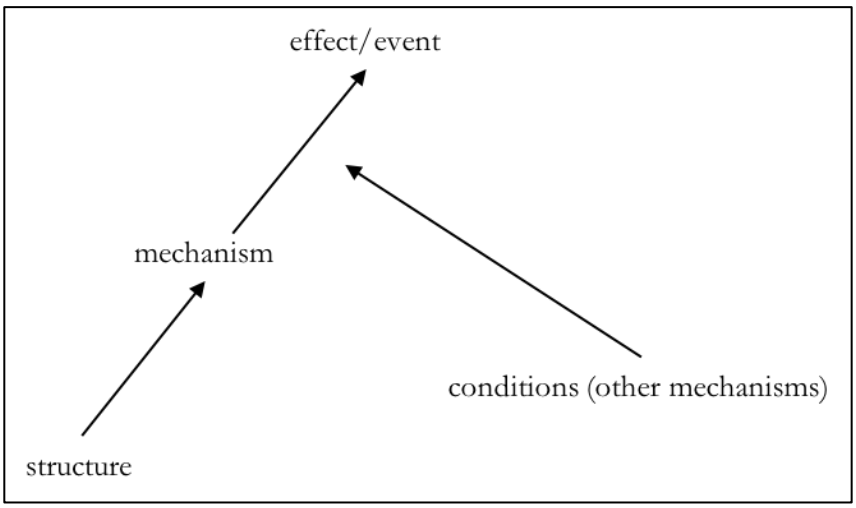


Figure 2: Critical realist view of causation

Some words of caution are in order: because social structures and mechanisms are always in flux, one cannot expect the relationship between cause and effect to be consistent over time. This should make one wary of hindsight bias, which can be minimised by bringing along an awareness of the uniqueness of each situation and phenomenon, regardless of historical observations. Another aspect is that the social world is a complex system where multiple mechanisms and structures interact. This gives rise to the risk of attributing effects to the wrong mechanisms, which is best countered by 1) studying examples with contrasting conditions, or by 2) scrutinising the effect through a series of critical questions about the observed objects' attributes and preconditions (Sayer, 2000).

Finally, critical realism does not predicate any method as better than others. Instead, a pluralistic *anything goes* approach to methods and techniques is suggested, as long as it helps in revealing the hidden structures and mechanisms of the social world.

3.3 Methodological reasoning

Having explained our basic worldview and understandings of generating knowledge, we now describe our methodological approach of *abductive* analysis to clearly establish how we engage with theory, empirics and data analysis. This is done to provide a description of the way in which we conduct our research, more specifically pertaining to the explanatory reasoning that we employ. This way of thinking is highly implicit

and intuitive, both in research and daily life, but we see value in being aware of its workings and explicit about how it is operationalised.

Abductive analysis, also referred to as "inference to the best explanation", seeks to find the most plausible explanation for a given phenomenon (Duven, 2017). The research process starts with a deep and broad understanding of the literature which, based on the researchers' intuitive judgment, best aids in explaining and describing the research object at hand. This is to be understood as an initial starting point to discover surprising findings. Furthermore, no favourite theory should guide the way in which empirical data is viewed. Instead, the adoption of theoretical agnosticism allows for viewing empirical findings against a background of multiple theories in an iterative cycle between theory, data and analysis (Timmermans & Tavory, 2012). This allows for the discovery of novel explanations, and an incrementally developing understanding of the phenomenon as a whole. Along the way, the least plausible explanations are discarded in favour of the most plausible ones.

One important caveat is the "argument of the bad lot": one can never know whether all rival explanations have been discovered. But, by making an effort to adequately exhaust the empirical and theoretical material, one can somewhat circumvent this. This is why an explanation can only be inferred to be the best among alternatives, and not to be absolute truth, which, the attentive reader will note, is perfectly in line with critical realist epistemology (Duven, 2017). Finally, included in the abductive research cycle there are inductive and deductive elements. The researcher looks for general themes and patterns in the data inductively, and through deduction he seeks to reanalyse existing data with new theory or initiate a process of gathering new data (Timmermans & Tavory, 2012). The object of research is thus refined continuously until a satisfactory level of explanatory power has been achieved.

Figure 3: Abductive reasoning

3.4 Case study design

To facilitate an understanding of our approach to empirical methods, we now turn to a reflection on our choice of design through a discussion of the critical realist principles presented above as applied to the design of a case study. Following critical realist notions, we are not looking to generate law-like explanations of phenomena by reporting on empirical regularities, but rather strive to generate valid causal claims (Welch, Piekkari, Plakoyiannaki, & Paavilainen-Mäntymäki, 2011). For this purpose, Sayer (2000) proposes an 'intensive' research strategy that starts out with the qualitative study of objects in their causal context, with the aim to construct a coherent and holistic understanding of a narrow issue. Here, the in-depth design of a case study serves well for revealing causal mechanisms and arriving at causal explanations (Welch et al., 2011).

We employ the case study as a 'contextualised explanation' as conceptualised by Welch et al. (2011), an attempt to reconcile the trade-off between generalisability and contextual sensitivity. These are often seen as opposites as theorisation is traditionally seen as a process of decontextualisation. However, following the critical realist worldview allows for developing explanations with a high contextual sensitivity. The implications for generalisability are that these explanations are only "contingent generalisations", meaning that a given outcome can only be generalised under the general contextual conditions, under which it is observed (Welch et al., 2011). Following the argument that "social science has not succeeded in producing general, context-independent theory", and context-dependent knowledge therefore is more valuable (Flyvbjerg, 2006), this level of external validity is deemed sufficient and a valuable contribution to scientific knowledge.

3.5 Methods

In this section we outline the choices of methods. From an overall level we utilise process tracing to analyse our findings and unveil the hidden mechanisms causing outcomes to occur. The evidence under scrutiny is gathered through a review of company documents and through semi-structured interviews with key actors. Finally, the process tracing examination is structured and guided by coding our data and theory in the qualitative data analysis tool of Nvivo.

3.5.1 Process tracing

Given our methodology's focus on finding causal explanations, theory-building process tracing lends itself as a fitting method of engaging with theory and empirics, because it is a way of discovering causal mecha-

nisms and explaining how they work. The goal of this method is to be able to say beyond reasonable doubt that the found explanation for a certain outcome is the best one, and that we have not overlooked any alternative, plausible explanations. To understand how process tracing works, we start out by defining causal mechanisms and their compatibility with within-case research.

Causal mechanisms are distinct from causes. We define them as "processes that are *triggered* by causes and that *link* the causes with outcomes" (Beach & Pedersen, 2018). E.g. multiple product call-backs occur (outcome) due to employee overemphasis on speed over quality (mechanism) because she is not measured on quality (cause).

Mechanistic causal explanation is thus a way of explaining why something happened by investigating the in-between processes that are a product of the underlying cause and how they link the cause to the outcome (Beach & Pedersen, 2018). For within case work, causal mechanisms can be approached in two distinct ways, with differing levels of analytical abstraction. In the *minimalist* view, only the existence of causal mechanisms is presented, without deep investigation of their constituent parts to explain how they work. This description of mechanisms is thus superficial and leads to weak causal inferences (Beach & Pedersen, 2018). It has its use, however, as it presents the first step in identifying potential candidates that warrant deeper investigation.

Deep investigation is done with a *maximalist* approach, in which mechanisms and their parts are analysed in further detail by "first unpacking them theoretically and then studying them empirically" (Beach & Pedersen, 2018). This means that a mechanism will undergo a thorough examination in terms of its theoretical and empirical fit. The individual parts of mechanisms are *entities*, namely persons, organisations or structures that engage in *activities*, which are the transmission of causal forces. We thus investigate mechanisms by looking for empirical fingerprints that the activities leave behind (Beach & Pedersen, 2018). Also, causal mechanisms are often part of a complex interrelated system, where individual parts only exercise their full causal power in relation to other parts. The maximalist approach aims to illuminate this context. The benefits of this approach are: a strong causal logic and an illumination of contingencies & context necessary for a given mechanism to work at the expense of considerable resources devoted to collecting and examining all relevant empirical evidence.

Our investigation of causal mechanisms is carried out through the method of *theory-building process tracing*. This method works by looking at a given outcome and working backwards, identifying potential causes and

subsequently causal mechanisms, which results in a theorised explanation of the process under study. First, from our observed outcomes and through our broad survey of the literature, we attempt to identify potential causes for the outcome. Then a theoretical proposition of the relationship between outcome and cause, and the intervening causal mechanisms is devised, to the degree to which our initial understanding of the problem allows us to do this. This will give us an initial 'hunch' about what we expect to find, and what kind of empirics we should look for. Then, the facts at hand are collected in a case description, outlining our initial understanding of the organisation on a superficial level. We then gather additional empirics through semi-structured interviews. This data and the initial empirical understanding are then probed against the theory to identify 'fingerprints' that are plausible explanations of the activities of causal mechanisms. Following the abductive approach, this is an open and iterative process where new data is related to existing findings, and new theory is consulted when it adds to our understanding of a given piece of empirics. When an initial hunch is valid theoretically and empirically, we can extend the testing, looking for other empirical fingerprints that might support our proposition. This will result in a large initial batch of mechanisms identified.

These competing hypothesised mechanistic explanations are then tested, sorted and qualified through a deeper examination of the mechanisms. With the aim to identify clear evidence of the workings of a mechanism, the empirical material is thoroughly investigated, ideally through triangulation of independent sources. We then compare different plausible explanations with each other, arguing logically which ones exhibit more explanatory power. This will continuously update our confidence in a given proposition about a mechanism, and less plausible explanations are discarded along the way, allowing for inferences to the most plausible explanation. An important point to make here is that a causal chain often contains several causal mechanisms, and each individual link of that chain can potentially be explained by different theoretical and empirical constructs. Also, while there might be some explanations that are more fitting than others, often, different explanatory accounts work in conjunction with each other, providing a more complete picture of the causal relationship (Beach & Pedersen, 2018). This means that it is possible to integrate alternative explanations rather than fully discarding them.

After presenting the logic of our inferences in section 5: Results & Analysis, we critically evaluate the quality and reliability of our findings and our source material. This is done in chapter 6: Discussion. This includes a discussion of how representative our empirics are of the entire case, the degree to which the accounts of interviewees are shared among the rest of the employees, how trustworthy the sources are, and

whether there are any biases to be considered. Also, a discussion on whether sufficient alternative explanations have been considered will be presented.

Ideally, the result of this method is a sound logical argumentation for the inferences made about the relationship between cause and outcome in the case. The aim is that the reader will be able to follow and reconstruct our applied logic.

3.5.2 The semi-structured interview

For additional data gathering, we needed a method, which allowed access of the subjective underpinnings of the entities in our case study. The choice of qualitative method fell upon the semi-structured interview as popularised by Kvale & Brinkman (2009). While several forms of qualitative interviews exist, the semi-structured form excels in that it allows for spontaneous and unexpected answers, while keeping the interviewer inside his thematic boundaries. In order to properly apply them, a certain degree of standardisation and structure is required and the semi-structured interview allows for just that (Kvale & Brinkmann, 2009).

Knowledge gathered from such interviews is co-produced and explorative in nature (Kvale & Brinkmann, 2009). Co-produced in that it is created between the interviewer and the interviewee and explorative in that it is emergent and allows for surprising drifting toward other explanations than initially expected. Thus, our interviews will be highly contextual, while holding the ability to explore the contextual relationships that our subjects find of importance. This means that our theoretical lenses and propositions about causal mechanisms will likely have to be revisited throughout this iterative process of assumptions and explorations. In the end this is expected to deliver a more accurate depiction of the causal links relevant to this study.

The interviews have been structured in a way so that the introductory and explorative questions revolve around the theoretical lenses developed in the scoping review. This was done to respect the explanatory potential in the extant literature, and just as importantly to produce knowledge that can be analysed and discussed with heuristic and narrative concerns in mind. Indeed, Kvale & Brinkmann themselves argue that knowledge generated through their interviews is narrative and pragmatic. Pragmatic is here a synonym to what we have so far called heuristic - knowledge must be useable (Kvale & Brinkmann, 2009). Also, moving through the different lenses prevents the interviews from moving too far down a tangent. However, some specifying questions were of course used when it was deemed necessary by the interviewers to challenge an opinion or to dig deeper into the layers of context. These were emergent, and thus not scripted.

Prior to the interviews a small briefing session was held to introduce the study to the subject. Once the interviews were completed, confidentiality issues were settled in a debriefing session. The interview guide can be found in appendix 10.

The method of the semi-structured interview is not without limitations. Firstly, an asymmetry between the interviewer and the interviewee exists, due to the interviewer having crafted the interview guide beforehand. This, alongside the co-produced nature of knowledge can foster quite a bit of subjective bias stemming from the interviewer. To combat this, both authors of the study were present for all interviews, lowering the individuals' assumption biases somewhat. Furthermore, we have sought to be as transparent as possible in how our prior assumptions came about and how the interview guides were made. They are based partly on the theoretical lenses described above, and partly on case knowledge gained prior to the interview process, described below. While it does of course not eliminate said bias, it does at least bring it to the forefront. Overall it is then up to a subjective evaluation whether the knowledge generated in our case study is scientifically sturdy. We argue of course that it is, and that the gains from our structured, yet emergent methodology in revealing hidden contextual relations far outweigh the potential biases.

The conversational nature of an interview needs to be transformed to a written form to allow for a proper report. Transcribed versions of the interviews can be found in the appendices. As we wish to prioritise content over semantics, we have transcribed the interviews according to the principles of simple transcriptions (Dresing, Pehl, & Schmieder, 2015). This means that most paraverbal and non-verbal elements are omitted and slang, dialects and colloquial language has been approximated as standard language (Dresing et al., 2015). This was done for issues of readability and to allow for a more precise analysis in Nvivo. The interviews are recorded and available.

The observant reader will notice that the interview guide for Jan Adolfsen differs from the rest. That is because he was interviewed much later than the other interviewees when our understanding of the case was much improved. We thus felt that our interview with Jan would be much more useful in answering our research question if we shaped our interview guide according to the areas where much uncertainty still existed. We argue that it is well within our abductive reasoning to do so.

3.6 Overview of overall research design

This section summarises the methodological discussions of this chapter in a presentation of the overall research design and process.

We start out by introducing the research purpose and research question. Through conversations with key employees, a review of company documents and general observations we arrive at the initial puzzle: there are challenges in the way that management control systems in the organisation are working, and it is questionable whether these systems are operating at the desired level. We thus proposed the research question: *Why is the efficacy of management control systems at coop.dk/shopping low as seen from a management perspective?* We thus identified the outcome to be investigated (point 1 in figure 4 below).

Based on our critical realist understanding of the world and following the methodological approach of abduction and the method of theory-building process tracing, we create an initial theoretical understanding of the issue through an extensive literature review. This gives us initial hunches about the outcome and possible underlying causes (point 2 in figure 4). Then, in an in-depth case study design, we gather empirical data to construct a rough narrative of the case. From this empirical collection we look for candidate causal mechanism to be investigated further. Once this iteration is done, we have a smorgasbord of potential causal mechanisms (point 3 in figure 4). The most plausible causal mechanisms will then be analysed in further detail and looked at from new theoretical perspectives and related to existing data to establish theoretical and empirical uniqueness and locate the best possible explanation of the research question beyond reasonable doubt (point 4 in figure 4). The reciprocal arrows of figure 4 illustrate the abductive process of back and forth movements between empirical and theoretical endeavours in the analysis.

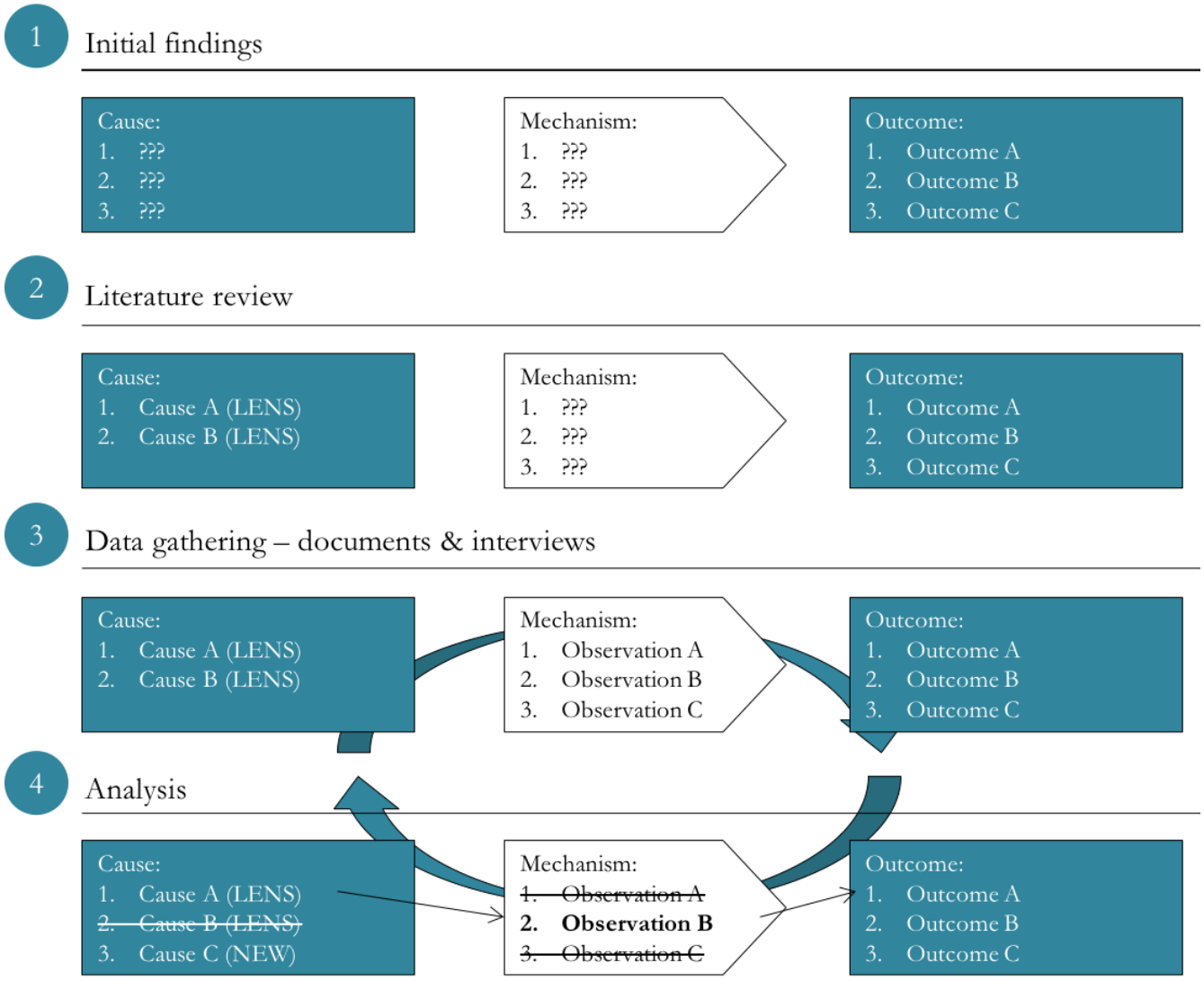


Figure 4: Approach

Having outlined our theoretical and methodological starting point we know turn toward presenting our initial knowledge of coop.dk/shopping.

4 Case description

The purpose of the following section is to construct a starting point for our enquiry into the operations and organisation of coop.dk/shopping that are relevant to answering our research question. The knowledge and descriptions below stem from conversations with the management and access to company documents that were carried out prior to the interviews. They are included to bring the reader to a point of understanding where she will be able to benefit from our analysis and discussion of the case. Also, we deemed it relevant to present these to create transparency in how we view the organisation and minimise (or at least bring to the forefront) any biases stemming from our subjective interpretation of the organisation at a surface glance. It is the foundation of the understanding we had prior to our interviews and what is easily gathered through a simple survey of the organisation. The interviews will thus qualify and expand upon what is presented here, and in synthesis with our theoretical lenses derived from the literature seek to generate an answer to the research question.

4.1 Background & history

Coop.dk/shopping is an online shopping centre specialising in various non-food categories. It is not to be confused with coop.dk/mad, which is its sister organisation selling food and food related goods online. For almost all organisational intents and purposes, however, they are two discrete organisations with separate mandates, responsibilities, management and employees. Coop.dk/shopping hails from Coop Danmark, the owner/parent organisation for a large chain of Danish grocery stores covering about 40% of the market. Coop Danmark is owned by Coop amba, formerly FDB. Coop amba is a union of self-owned grocery stores founded in 1896 to facilitate better procurement for the individual members. Today, apart from the online shop, which is the focus of this study, the organisation owns a plenitude of grocery stores apart from the member organisations and features a large professional administration centre, which governs most of the supply-chain for its members. It also has several child organisations such as a bank and a publisher.

The cooperation's unionised heritage is very important in understanding processes and decisions internally in the organisation. Everything is heavily politicised compared to how competing grocery chains operate. This makes big decision processes long and cumbersome and implementing big changes such as new IT or ERP systems difficult and lengthy. Also, the members have a lot of power and tend to view new invest-

ments in the administration critically if not downright sceptically. After all they pay a membership fee and like any grocery store managers, would like to get sufficient value from this.

In 2000, the online procurement and inventory handling arm of Nettorvet was established. It was a way for the brick and mortar stores to easily access goods online and had limited webshop capabilities. This changed in 2011 when Nettorvet officially became coop.dk. A new strategy was decided upon in 2013 and was implemented throughout 2014. The full setup was live in 2015, which marked the first year where the online shop became profitable.

4.2 Main tasks and activities

Coop.dk/shopping sees itself as an online shopping centre, the online version of your brick and mortar centre. This reflects an attempt to bridge the depth of the online special store and the breadth of the online marketplace. The shop is thus a collection of special stores and this is visible when looking at the goods. There are plenty of high-end products, which you would not find in a regular grocery chain. This is possible due to the brand image of several special stores, which attracts suppliers that would otherwise scoff at being sold in a grocery-like setting.

The stores are currently:

- Indoor living
- Outdoor living
- Bicycles
- Children
- Beauty
- Books
- Toys

This list is meant to expand in the future adding new stores gradually to become a fully-fledged shopping centre. In fact, the bookstore was added quite recently. Previously, a Wine store was also present, however, that was abandoned to properly drive a wedge between food and non-food. Coop does sell food online, but this is done through coop.dk/mad, which is, as mentioned an entirely separate subsidiary with very limited shared functionality with coop.dk/shopping.

While coop.dk/shopping practically serves all the segments that its brick and mortar grocery stores would also serve, it pulls upon a unique market base made up by the members of coop. These members are registered at their local grocery stores to receive discounts and special campaigns. While such membership programs are common in retail chains, that of coop.dk/shopping is unique in a Danish context due to its sheer size. With over 1.6 million members, the organisation has a wonderful avenue for targeted marketing and valuable business intelligence.

4.3 Management and organisation

Coop.dk/shopping has its own commercial director Peter Gram Møller (PGM), who is responsible for the daily management of the organisation. He refers to the corporate director Jan Madsen, who in turn answers to Peter Høgsted, the chief executive of Parent Coop. Coop.dk/shopping has various in-house functions. Of these, the biggest ones are marketing and customer service. Marketing has its own chief officer and covers texting, customer relations management, art direction and search engine optimisation & online analytics. Customer service is situated at an office across the road and is a relatively autonomous unit most of the time. Also, in-house, there is a catch-all business development and logistics unit lead by Palle Esbensen (PE). This unit covers a diverse field from parts of operations, to management accounting and front-end IT. The backend IT and many crucial operational functions such as logistics are carried out by the parent organisation, resulting in much coordination between "Big Coop" and coop.dk/shopping. Henceforth, we shall refer to the central organisation as "Parent Coop".

Coop.dk/shopping has three in-house sales managers and a sales support division. They split the various online stores between them. Procurement is a bit more complicated. For two of the shops, namely the Indoor Living store and the Children store, it is done by in-house units. The remaining five procurement units, however, are situated at Parent Coop under the management of the Chief Procurement Officer Jan Adolfsen (JA). The organisation can thus be summed up in the organisational chart below

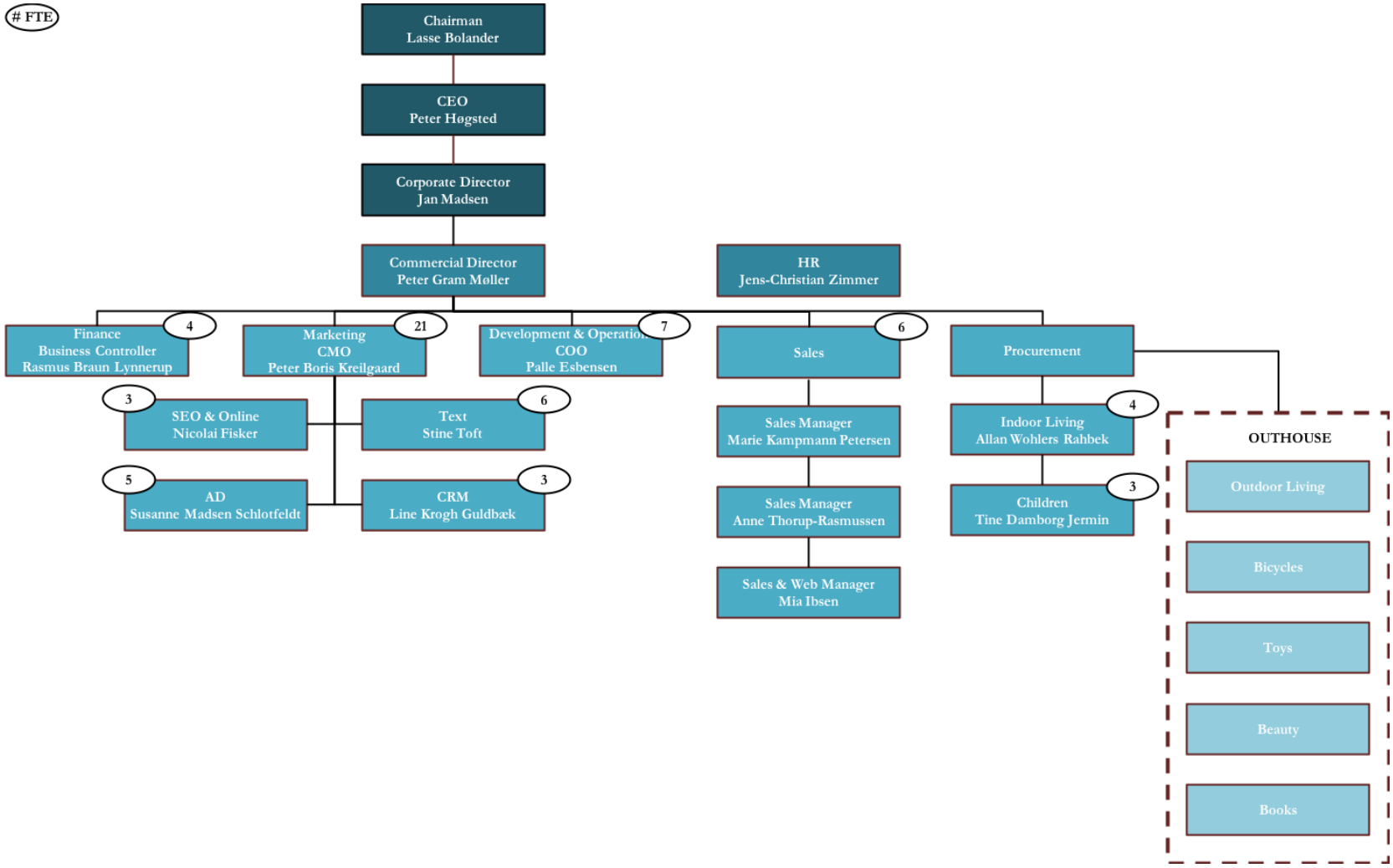


Figure 5: Organisation of coop.dk/shopping

The supply-chain of coop.dk/shopping starts at the suppliers themselves. The online retailer sources from both domestic and foreign suppliers, who are mostly selected by the products they offer. A primary pre-requisite is quality. Not that all goods are premium, but cheap plastic aesthetics are avoided. The first link connected to the suppliers is procurement. As already mentioned procurement is a split responsibility of coop.dk/shopping and Parent Coop. The inventory disposition is handled by Coop Logistik, a subsidiary of Parent Coop. Coop Logistik is also responsible for inbound logistics. Approximately 10% of this is collected by Coop itself; the rest is the responsibility of the suppliers. The in-house operations are handled by the Danish logistics service provider DSV.

Warehousing is split in three separate functions. Warehouse 86 is administered by Coop Logistik and is a major non-food warehouse for Parent Coop situated in Odense. Coop.dk/shopping taps into this for small easily handled goods. Mostly these weigh less than 20 kg and can be shipped by regular means. The second warehouse is Warehouse 78, also referred to as Smedeland. It is located close to the headquarters of coop.dk/shopping and is managed by the Nordic postal service company PostNord. It houses heavy and voluminous goods which needs special shipment. Finally, Warehouse 31 does not physically exist, but refers to all goods shipped directly from supplier to customer. All outbound logistics are handled by PostNord.

The supply-chain is summed up below:

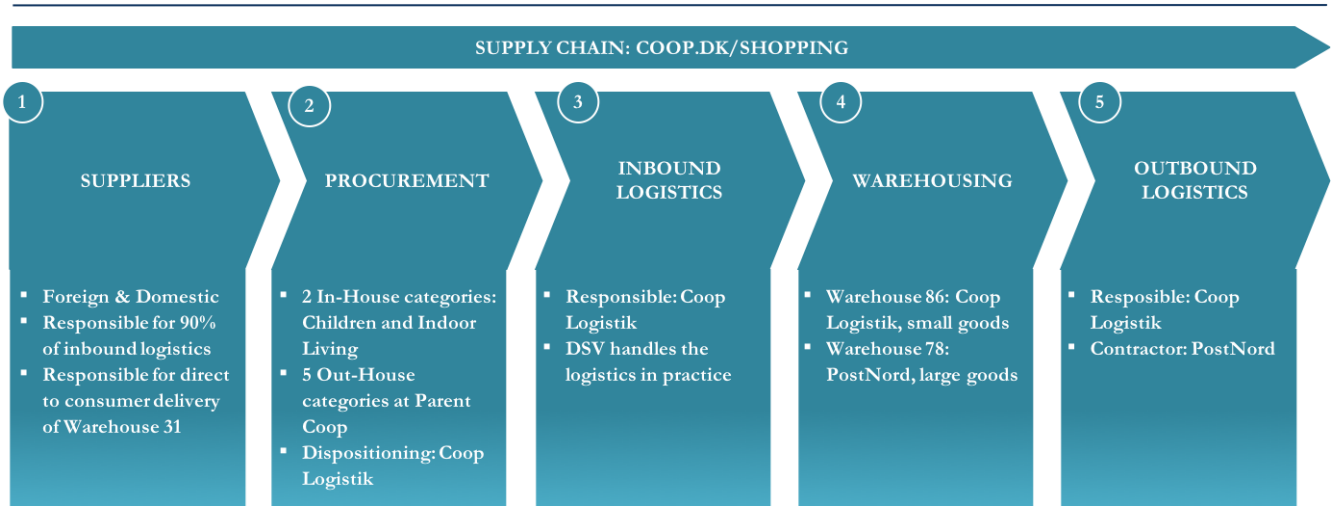


Figure 6: Supply-chain of coop.dk/shopping

4.4 Vision, mission and strategy

The official vision of coop.dk/shopping is "to be the preferred retailer of non-food products for quality-concerned customers". The mission framing this is "to make shopping easier for those who do not buy just anything". These goals are reflective of the Coop heritage and values, which commit the organisation to be responsible and dedicated to quality when it comes to their products. They thus aim for a selected offering, rather than a broad catalogue of goods of questionable quality. Furthermore, they wish to be known as people with opinions rather than being neutral retailers. They finally desire an image of someone who knows and listens to their customers.

On a more executive level and as per the desire of the parent organisation, the immediate goal is scalable growth. Ideally, coop.dk/shopping will increase revenues by 20% annually to eventually reach a billion in sales within a few years. To get there; focus is on the retention of current customers and a continued market penetration to new customers and markets. This is likely to include new stores, and the newly launched book-store reflects this. Also, the large customer-base that is the Coop members should be better targeted and communicated with. Apart from the revenue-concerned actions, costs should be driven down through utilising scale economics and improving processes, the latter being a focal point for this papers analysis. Finally, better use of data, an automatisation of processes and a personalisation of the user experience will support the above-mentioned initiatives.

Besides the strategic programs outlined above, the company wish to rethink its sales and operations planning (S&OP) processes by introducing S&OP 2.0. The ideal is a monthly collaborative effort to walk through inventories and campaigns with the aim of discussing them strategically and create actionable forecasts for procurement, sales and operations. These meetings should also prioritise efforts for the common good and secure that people work in symbiosis. Concretely these efforts will hopefully result in structured inventory control & monitoring, improved campaign controls & forecasting, a more thoughtful procurement process and an overall reduction of externalities.

4.5 Data and at coop.dk/shopping

At present, multiple devices of MCSs exist within coop.dk/shopping. They broadly fall within two sets: reports and platforms.

The reports are collections of accounting information generated regularly by the control unit, or sometimes others, mainly for diagnostic and information purposes. They can, however, be used in actionable ways, dependent on the receiver. In no particular order these reports are:

Report of central Key Performance Indicators: This is collection of indicators used to measure and control senior management and the key partners such as Coop IT and Coop Logistik. It is the overall performance of the key indicators that is measured, and reports are thus rarely known outside of the senior management of the company.

The revenue and gross margin report: This weekly report is one of the most important reports used to track the overall performance of the store and the different sub-shops. It is scrutinised weekly at a meeting with the entire team present to discuss and gain insight in the current performance of the shops.

The inventory report: Used extensively by logistics, operations and procurement to scrutinise the performance of various stock keeping units (SKU) and discover inventory management issues in due time. It distinguishes itself by being somewhat interactive due to its allowance for the individual employees to comment on the situation of a specific SKU.

ABC KPI reports: An overtime tracking system for the ABC platform (see below). It tracks KPIs of inventory and shows the progression of the sub-stores in dealing with their bad performers. It was used for the former Sales and Operations Planning (S&OP) meetings to measure the joint performance of logistics, sales and procurement.

Sold-out products: This report warns procurement, marketing and sales when goods are sold out on the site and guides repurchases and campaigning.

E-mail campaign report: This report is used mainly by sales and marketing to track the performance of their email designs. It is used to experiment with new designs and make sure that old designs are still relevant.

The contribution margin report: Used when a deeper dive than revenue and gross margin is needed.

The budget: All the sub-stores have their own individual budgets used for the business review conducted with senior management. The budget also figures as a central measurement in all weekly communication of accounting information.

Pricerunner: A daily Pricerunner report shows where the pricing of the most important products sold in each sub-store are located in the market. It is used to strategically price the goods for optimal performance.

Backlog analysis: A safety document for control and management to make sure that they measure and control the performance of the sub-units fairly and do not forget revenue arriving late for administrative reasons.

PostNord Logistics Report: A report written by the contractor PostNord delivered to the operations manager to ensure proper measurement of the performance of the contractor.

Apart from the reports coop.dk/shopping utilises three platforms for accounting information internally. The first is Google Analytics, a platform designed by Google to provide relevant information to e-stores about the behaviour of their customers. The second is the Coop DataWarehouse, the electronic information hub of the company. This is where most of the formalised accounting documents and weekly reports are generated, but some people in the organisation also use it for ad hoc reports. The final platform is ABC Analyzer. Here, inventory accounting information on the SKU is readily available and can be graphically represented in meaningful and intuitive ways. It is based on 80/20 analysis, highlighting the importance of the top performing wares and focusing attention towards them. I can also show the worst performers and help guide behaviours towards action.

Generally, the controllers and the operations department are frustrated with the limited and insulated use of accounting information and the insufficient use of data and the expensive platforms available. Furthermore, management desires a more evidence based, data-driven decision-making process, but many of the reports above see limited use compared to the cost of producing them and the intentions endowed in them. As new management proposals such as a revamped S&OP system and a Balance Score Card are being proposed, there is a worry that they will end like the current systems. This realisation sparked the research question of this paper and we will shortly turn to analysing the causes and mechanisms related to better understand the issues.

4.6 The interviewed

To get an idea of the mechanisms, causes and outcomes related to the use of management control systems within the organisation and together with key partners, we desired a broad interview base touching as many

of the functions as possible given our scope and remit. Therefore, the following stakeholders were interviewed:

- Palle Esbensen (PE). Palle is the head of operations and development. Palle is responsible for new initiatives in front-end IT, logistics, inventory management and finance.
- Rasmus Lynnerup Braun (RLB). Rasmus is the business controller of coop.dk/shopping and is responsible for designing and managing many of the MCSs and other accounting information.
- Nikolai Fisker (NF). Nikolai works in marketing as the head of SEO and online analytics.
- Anne Thorup-Rasmussen (ATR). Anne is one of the three sales managers and is responsible for the stores of children, toys and books.
- Jan Adolfsen (JA). Jan is the Chief Procurement Officer (CPO) of Parent Coop and manages the five procurement units that are out-house for coop.dk/shopping.
- Peter Tychsen (PT). Peter works with procurement for the in-house procurement unit for the children store.
- Dorte Larsen (DL). Dorte works with procurement for the out-house procurement unit for the outdoor living store.
- Morten Boye (MB). Morten is the operations manager for Warehouse 86 in Odense.
- Charlotte Ammitzbøll (CA). Charlotte is a business controller for Coop Logistik, mainly working with coordinating accounting data across the supply-chain.

5 Results & Analysis

Having presented our initial understanding of the case as well as the theoretical and methodological underpinnings of our study we now turn towards analysing observations made through our semi-structured interviews. The goal of this section is to pair outcomes and causes through mechanisms that are empirically and theoretically sound. Slowly and iteratively we build a full causal chain with the most plausible explanation of the low efficacy of management control systems at coop.dk/shopping as seen from a management perspective.

5.1 Coding

All of our interviews were coded with the Nvivo software for handling and organising qualitative data. The codes used for organisation were derived from our literature review and any comment from the interviews, which were directly or indirectly related to one of the codes were grouped together in order to easily isolate the key takes for each lens or sub-lens. While the initial set of codes was guided by our literature review, several additional codes were added when information came about, which seemed to be of importance, but did not fit any of the predetermined lenses. This is in line with our abductive iteration through theory, empirics and analysis, and our ambition of inferring to the best possible explanation. To provide full transparency, any such inclusions have been brought to the forefront in the presentation below. As process tracing is a somewhat subjective exercise, it is our hope that such transparency will mediate, or at least illuminate any biases inherent in our data analysis process.

5.2 Outcomes

It seems prudent at this point to take a step back and reconsider the purpose of this paper. We seek to answer the question of: *Why is the efficacy of management control systems at coop.dk/shopping low as seen from a management perspective?* In our now specified process tracing nomenclature, our approach is an endeavour to explain the causal mechanisms, which link the low efficacy of MCSs at coop.dk/shopping to its causes. Iterating through our interview data, however, it became clear that this outcome and the underlying mechanisms could be separated into *two* different causal chains.

The first chain concerns the use and communication of strategy and accounting data within the organisation of coop.dk/shopping. The second chain concerns the supply-chain from supplier to customer and several issues of responsibility and coordination inherent in this. While the two do interrelate and share

several base causes we thought it didactically prudent to discuss them separately and will do so in the following analysis. Figure 7.1 shows the causal framework with outcomes clarified.

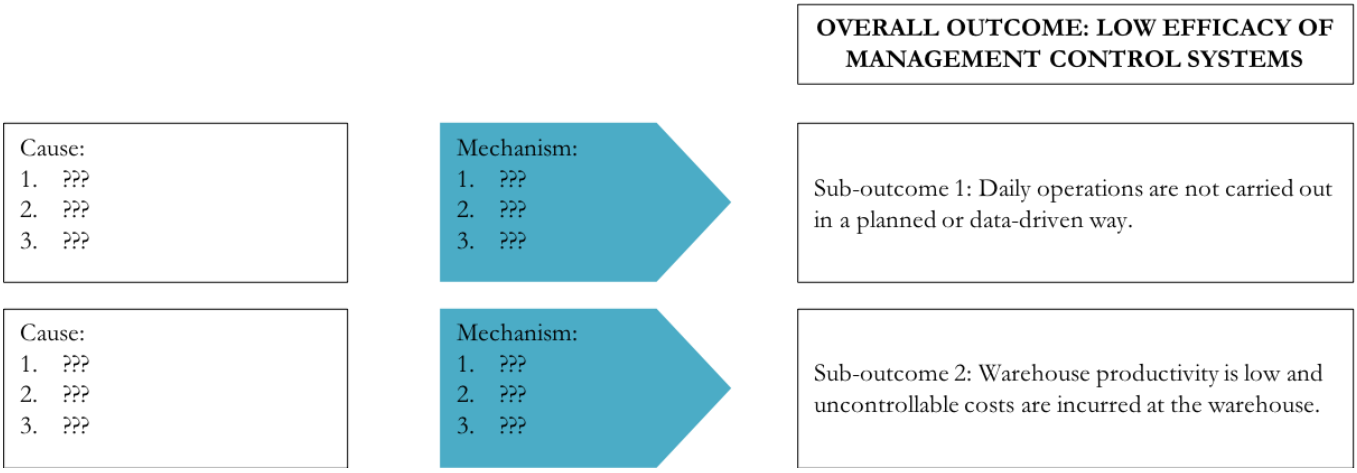


Figure 7: Outcomes

5.3 Causes

Having qualified the outcomes that are linked to the low efficacy of management control systems we turn towards discussing the potential causes. Going into the interview process we crafted interview guides that were guided and structured around the theoretical lenses presented in the literature review. As these were based on overall themes that mediated the role and performance of management control systems, we speculated that our root causes would be related to these. Thus, to explain the outcomes we initially had the following list of possible causes:

1. Structural causes (Lens 1)
2. Decision and control causes (Lens 2)
3. Measurement and reward causes (Lens 3)
4. Implementation and design causes (Lens 4)
5. Personal relation causes (Lens 5)
6. Causes derived from alternative theoretical schools (Lens 6)

As mentioned these were instrumental in crafting the interview guides, but to structure the coding process, something more detailed was needed. Revisiting our lenses, the following cause codes were designed:

1. Structural causes (Lens 1)
    1. Structure
    2. Coordination
    3. Hierarchies and divisions
    4. Restructuring
2. Decision and control causes (Lens 2)
    1. Authority
    2. Externalities
    3. Real authority
    4. Controllability
3. Measurement and reward causes (Lens 3)
    1. Measures & goals
    2. Motivation & performance
4. Implementation and design causes (Lens 4)
    1. Strategy
    2. Design
    3. Implementation
5. Personal relation causes (Lens 5)
    1. Manager
    2. Personal relations
    3. Culture
6. Causes derived from alternative theoretical schools (Lens 6)
    1. Non-rationalist
    2. Ethnographic
    3. Institutionalism
    4. ANT
    5. Behavioural economics

This list was throughout the coding process supplemented with causes stemming from 1) Responsibility, 2) Knowledge, 3) Technology and 4) External environment. The entire process was guided by a mind-map generated in Nvivo, which can be seen in figure 8.

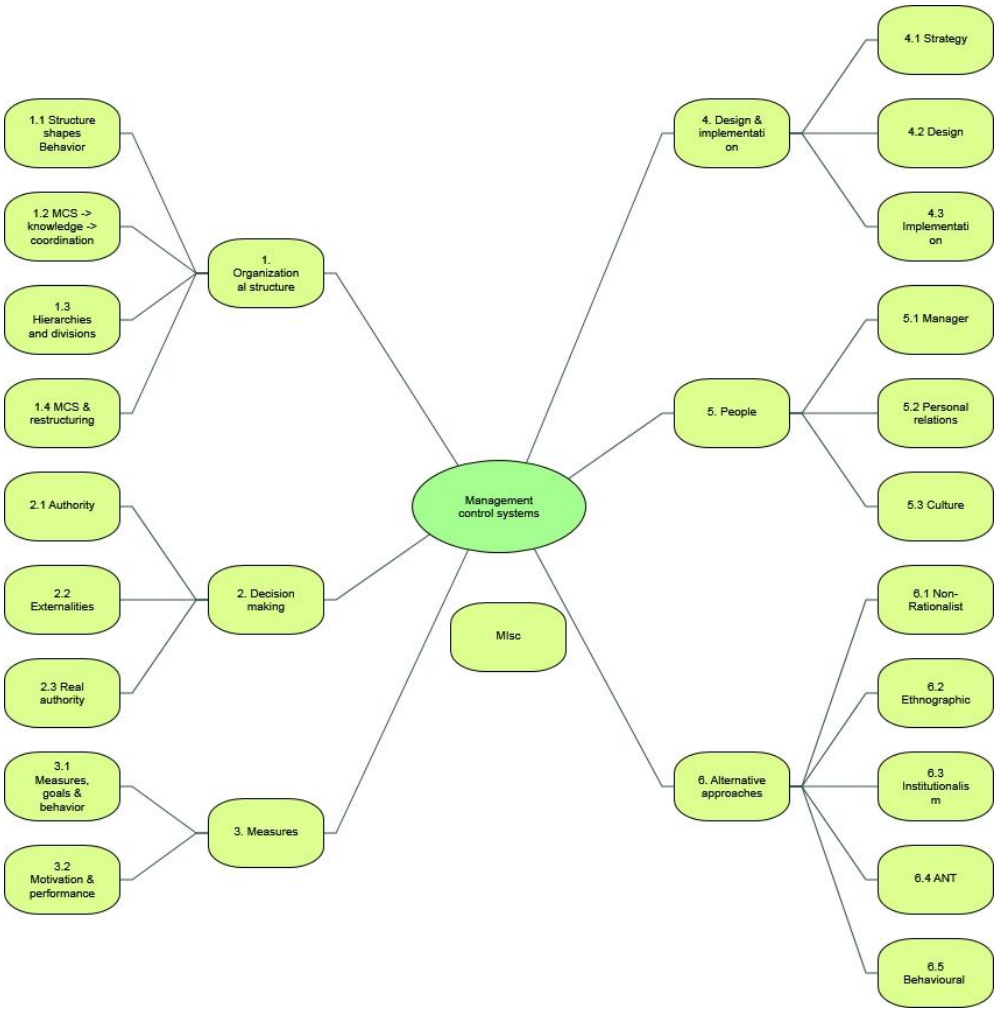


Figure 8: Mind-map from Nvivo

After having coded according to these lenses, a total of 618 references to qualitative data had been coded. We then iterated over the codes trying to establish whether they were a cause to the outcome, part of a mechanism leading to the outcome or irrelevant to the outcome. It was apparent that most of our lenses held some explanatory power over the outcome. As most of the identified causes can be viewed through multiple lenses, we now soften the barriers between them. We will still refer to them when we examine the mechanisms in depth in the following pages, however, their separation served its purpose in guiding the interview and coding process and it would create arbitrary noise in the in-depth analysis to continue upholding this strictly from now on. Furthermore, mechanisms and causes with different theoretical aspects interrelate and interact to form the full causal chain we seek to illuminate.

In a way, a cause always comes from somewhere; to put it differently, it has its own causes. Thus, we need to set limits to our causal model. We decided to frame it by what is theoretically interesting and practically possible. For example, we could speculate a certain leadership style to stem from the upbringing of the individual managers, and we might even investigate this further, attaining empirical observation to theoretically scrutinise. This, however, would unlikely be theoretically interesting and would unnecessarily prolong our causal chain without aiding our argument. Furthermore, while we could always return to our interviewees and ask about the causes of causes, at some point it would be practically impossible to return for another round if we were to ever hope to get an answer to our research question. Also, the value of digging deeper past a reasonable amount of empirical data is likely to be decreasing exponentially.

The causes presented below are thus empirical manifestations of the theoretical contingencies of management control systems described in the literature review. We deem that it would not be theoretically relevant to go back further in the causal chain and we aim at reducing our biases by being transparent regarding our cut-off point. These causes were reached by taking our outcomes and working backwards through empirical observations with our theoretical lenses in hand. This process tracing exercise will be described in detail in the following sections.

Figure 7.2 below shows the root causes identified through our interviews, which will frame the process tracing. We now turn to showing *how* these causes lead to the outcomes through the two mechanisms, one which is discrete to the coop.dk/shopping organisation and one that includes the supply-chain.

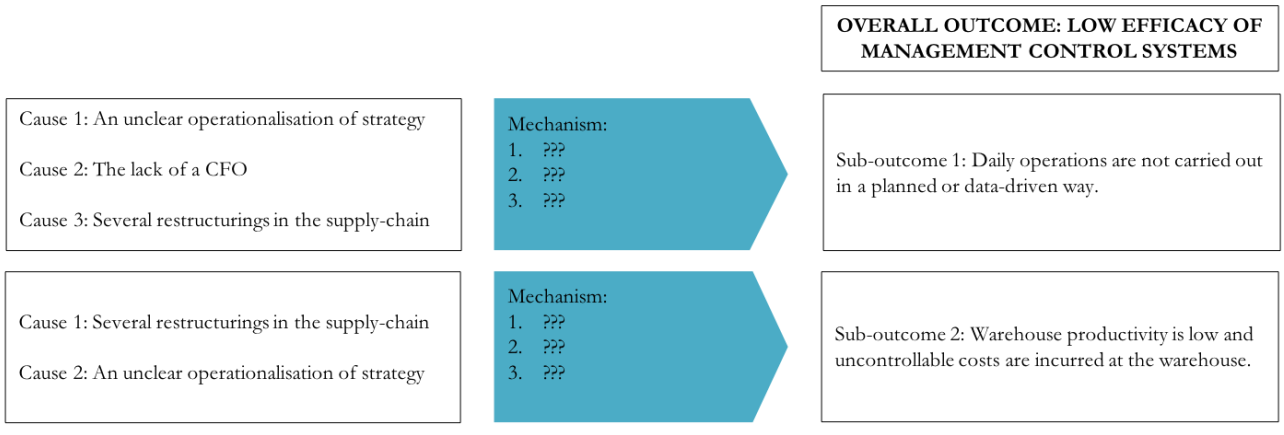


Figure 9: Causes

5.4 Mechanisms

Having identified the outcomes we wished to study and their root causes framing our tracing exercise, we now turn towards linking the mechanisms to uncover how the causes triggered the outcomes.

From our interviews we had a plenitude of observations that were coded according to our theoretical lenses. From these we worked like a detective, moving through them iteratively, establishing links and interdependencies using the logic outlined in the methodology chapter. This gave us two initial processes.

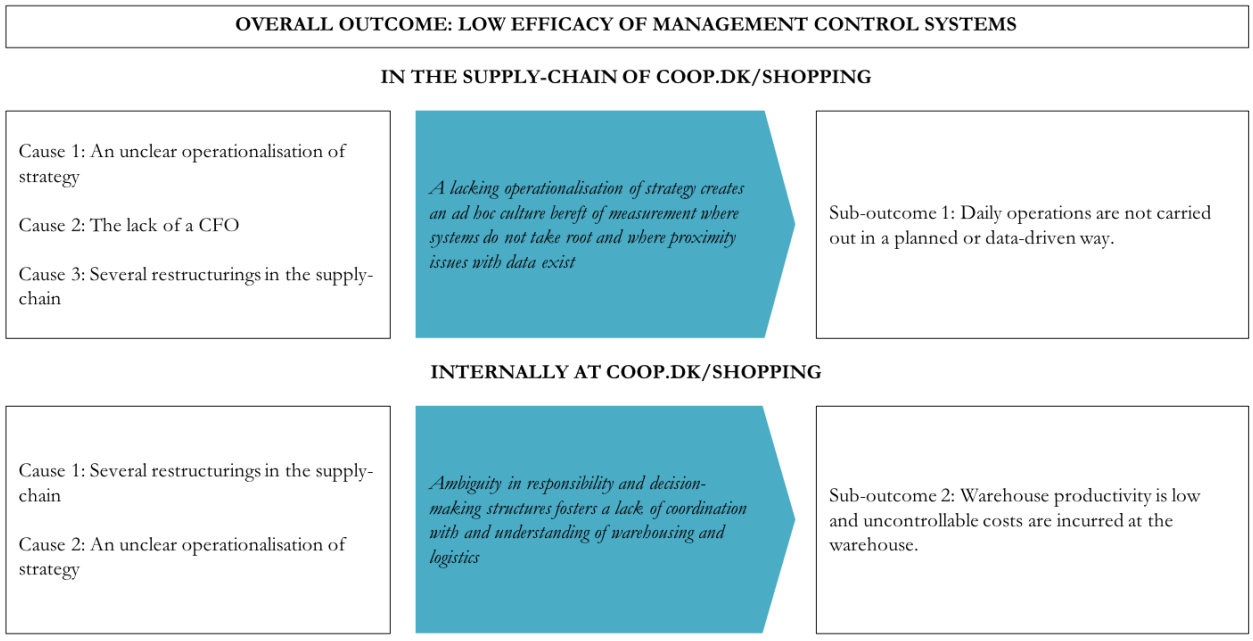


Figure 10: Mechanisms

These will now in turn be dissected and inspected according to various theoretical and logical explanations. In truth this process was more iterative and abductive than would be apparent from the following. A lot of cross-referencing between the mechanisms, the interview data and the theory took place to actually trace these outcomes to their root causes.

In the following sections our approach will be as follows: Firstly, we shall outline our empirical narrative to present the causal logic, which we used to connect different observations to each other and which in the end serves as a foundation for the causal framework. Secondly, we will apply our theoretical lenses to that empirical narrative to scrutinise our observed links from theoretical perspectives stemming from the extant

literature. Finally, the empirical narrative will be evaluated and summarised into the final causal mechanisms.

5.5 Causal chain I

As mentioned, our empirical search showed how the mechanisms leading to the low efficacy of MCSs are actually two-pronged. This section analyses the causal chain that is mainly internal to coop.dk/shopping. This causal chain also has multiple mechanisms. It bifurcates into two separate parts. One of these relates to how a strategy and data gap is stemming from a lack of measures and an ad hoc culture. The second explains that same gap by linking it to a tendency for new systems to not take root and proximity issues with data.

5.5.1 Empirical narrative

The current strategy for coop.dk - to grow substantially during the next few years - does not seem to be unfolding as the management would have hoped. This became apparent through informal conversations and interviews with the CEO and the operations manager, who mentioned having difficulties establishing data driven operations. Looking at our data, there indeed seems to be a general lack of systematisation and standardisation of processes:

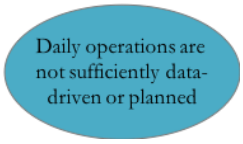
> **NF:** "I would like to emphasise that many things are done the old-fashioned way. Everything is excel-sheets, with no dynamic updates. Compared to what I'm used to that is very outdated and time consuming and in no way optimal." (Appendix 3)

The organisation was able to compensate for this in the past, but with the current growth and future prospects that is no longer viable.

> **RLB:** "There are a lot of processes that are still not standardised. Some of this comes from the fact that coop.dk has been a relatively small ad hoc company, so the problems have not been big enough to be systematised, but we are beginning to reach this size now." (Appendix 1)

> **PE:** "It should be data-driven development, more than gut feelings and "I think..." and "I can sell this..." that does not work any longer. We are very aware of this." (Appendix 8)

We will now investigate the causal mechanisms leading to the outcome of a strategy – execution gap and the daily operations lacking data driven and planning flair.

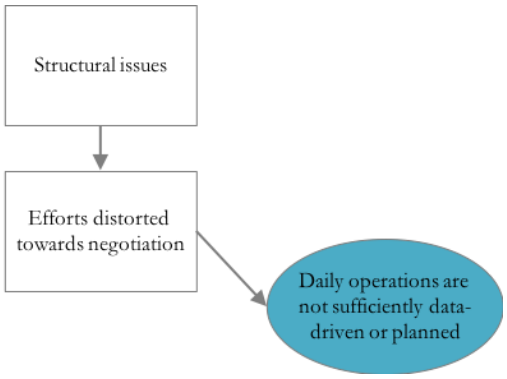


We observed several occasions of distorted behaviour and issues with effort allocation. For one, the sales managers are responsible for business plans, however, they have to coordinate with the category managers and marketing when executing on these. This means that some parts are out of their control, even though they have the final responsibility, resulting in a controllability problem (Zimmerman, 2017). Also, because procurement is mostly situated at Parent Coop, the sales managers have limited authority to make assortment decisions. Therefore, they engage in diplomacy and negotiation to resolve conflicts. This incurs additional costs as the efforts of the sales managers are distorted towards spending time in meetings and away from core sales activities.

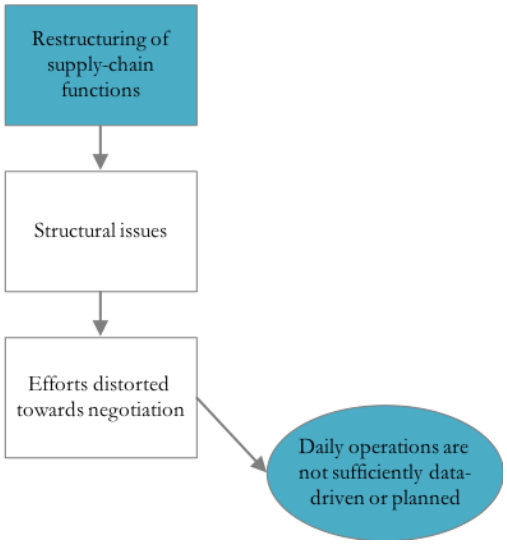
> **ATR:** "This year we have taken the initiative that the sales manager has the ultimate responsibility for the business plans (…) who is then actually responsible for the assortment? And that is a politically dangerous topic, because in principle it was Peter Gram's opinion that the sales manager has the ultimate responsibility, but then we have these organisations, where some think "no they definitely do not!" (…) so, we have a lot of examples of the sales manager not having a clear mandate." (Appendix 2)

> **ATR:** "We sales managers have handled a lot through negotiations and diplomacy (…), but that is in some ways a lubricant you use when you lack the proper mandate to dictate the assortment." (Appendix 2)

We argue that the controllability problems created by the matrix structure where the procurement units have multiple bosses, violate the principle of the single decision maker (Lazear & Gibbs, 2015), which distorts the efforts of the sales managers and procurers. That could have been avoided, had clear mandates been in place. This ambiguity makes it hard to plan ahead, and we suspected that a fingerprint leading to the culprits causing issues with planning had been found.



These structural issues originate in multiple restructurings and responsibility uncertainties. However, we will not discuss those in depth in this section but will return to them in force in section 5.6 when we trace mechanisms in the broader supply-chain of coop.dk/shopping.



Surveying the organisation, we found additional evidence for the negotiation-based way of handling problems in the organisation. When investigating the use of performance measures, we observed that most employees navigate around measures and established goals such as budgets and profitability, but that these measures are only followed up in a conversational manner. For example, the employees discuss what could have caused a budget overrun with their superiors. There are, however, no direct consequences agreed upon beforehand. When asked about measurement one procurer put it this way:

> **DL:** "What we do is nothing more than walking through the numbers and then questions are asked, and I have to explain why the numbers look like they do." (Appendix 5)

Another puts it this way:

> **PT:** "It is nothing more than that we need to find a solution for it and if we cannot come up with something on our own then it is a collaborative effort with Tine and Anne [procurer and sales manager] about how to solve it.
>
> (…)
>
> **OR:** "So there is a dialogue about it?"
>
> **PT:** "Yes there is, continuously, all of the time." (Appendix 4)

Thus, follow-ups on measures and initiatives are conversational and rather soft. In fact, it was heavily implied that actual evaluations of performance are absent from the organisation.

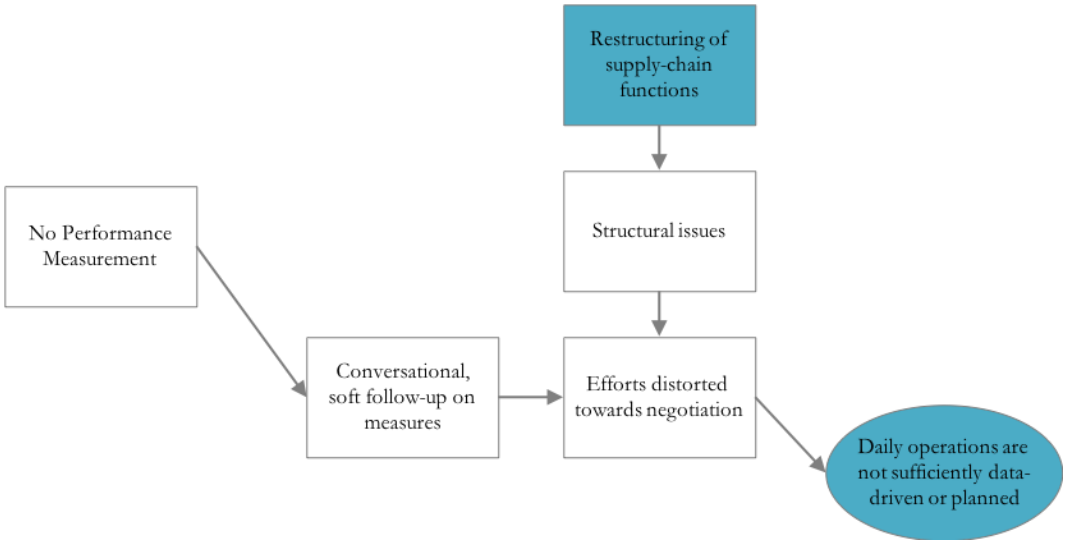
> **NF:** "(…) But there are no direct KPIs that I am measured on."
>
> **OR:** "Is this normal in the organisation?"
>
> **NF:** "That is my impression yes. No one is specifically measured on concrete goals."
>
> (Appendix 3)

> **OR:** "Concerning your goals and what you are measured on, how rigid is that?"
>
> **PT:** "Nothing more than we have to find a solution." (Appendix 4)

> **RLB:** "Well yes, there is a… I talk with my boss about where to put my effort. But am I measured on anything? I do not have any specific parameters where he can say if that is good or bad." (Appendix 1)

It has been theorized that such a regime of soft measures and non-consequential performance evaluation leads to unguided allocation of efforts (Lazear & Gibbs, 2015). We thus argue that a lack of a developed PMI structure results in conversational follow-ups at coop.dk/shopping. This in turn results in effort distortion, which then leads to a lacking daily use of data. The issues with distortion of efforts towards nego-

tiation are thus not merely structural, but is also stemming from the organisational build in terms of goals and measures.

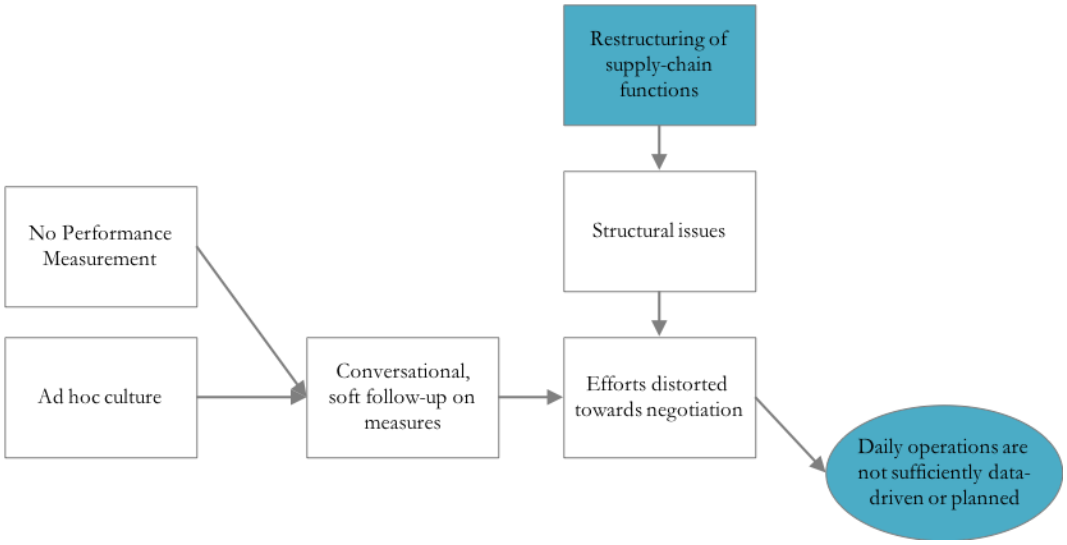


Apart from a lack of measurement and qualitative follow-ups, the distorted efforts and conversational approach to issues also seem to stem from the company culture, which appears to be based to a large degree on ad hoc solutions and projects. The business is fast-paced and there are often unforeseen events which need to be attended to. This means that ad hoc solutions are needed for short term issues and to react on emergent problems.

> **KMR:** "And is that [weekly project meetings] institutionalised? So that you have a procedure whenever you do a test, or is it more ad hoc?"
>
> **NF:** "It is mostly ad hoc, I would say." (Appendix 3)

> **ATR:** "It is project based, that is, meetings are set up based on a concrete problem, which needs to be solved. And I think that there are a lot of those in this organisation. (Appendix 2)

These observations imply that the decision-making process is characterised by a short-term approach, where the employees move from one pressing issue to the next, at the expense of long-term goals and targets. This ad hoc culture furthermore enables the conversational follow-ups as the lack of a formalised structure permeates into the evaluation on measures.



Apart from the chain that connects the strategy and data gap to an ad hoc culture and a tendency to shun performance measurement, we found another potential clue as to the origin of the issue. At coop.dk/shopping a lot of work is done through a multitude of old software which is hard to update due to Parent Coop's size. This limits organisational agility.

> **NF:** "And then there is the next step where Peter Gram has to go further up in the management [of Parent Coop]. That can cause some challenges (…). And that process has taken a year and a half, just to say, there are only two options (…) that has taken a year and a half. (…) So now it is finally decided, then we have to see how fast it can be implemented." (Appendix 3)

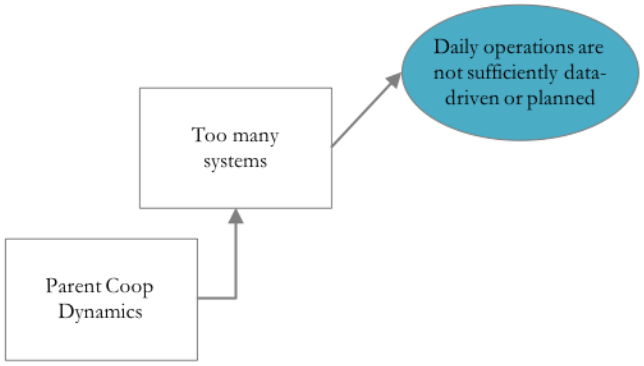
> **PE:** "That means that every time you need changes (…) you have to go all the way back to Adam and Eve to follow that thread through the system." (Appendix 8)

As an overhaul of systems are thus far away, a lot of work is being done in smaller add-on systems and customised Excel models. There are several statements about the abundance of different systems in place, and how this is confusing as it makes it cumbersome to obtain relevant information for decision-making for the individual employee. Some employees feel burdened by the amount of systems and information and would wish for a simpler and more streamlined flow of knowledge.

KMR: "Your view of coop.dk and financial control, anything to add?"

PT: "Too many systems! Let us get some SAP and the new Office package. There are far too many resources being used navigating in old systems." (Appendix 4)

We suspected that this multitude of systems is a manifestation of deeper issues muddying data use and planning at coop.dk/shopping and thus now attempt to trace that through the organisation.



Looking for clues as to why there are so many systems and reports in place, we identified that there are some proximity issues with skills and data. Vital skills such as generating new reports and providing information are situated within coop.dk, making outhouse procurers experience difficulties of gaining access to the skills and the data that they need. In one example, a purchaser reported that she was unable to see the profitability of her goods, because the reports available to her did not include the handling costs at the warehouse. She could thus end up buying an item which looked good on paper, but when the final profitability report came in, turned out to be unprofitable. She then relies on the employees with the skills and access to this data for answers.

DL: "I would like to have a report, which takes into account the inventory cost and where I, based on purchase price, can calculate which sales price and campaign price I can have on the items that will be in stock at the Postnord warehouse. I have talked to Rasmus about this report, but I don't know if he is working on it." (Appendix 5)

Even within coop.dk/shopping, it is sometimes challenging to get access to relevant data. This can be partly attributed to the fact that the former digital marketing manager seemed to be very protective of his area of work, unwilling to share his knowledge with others, further exacerbating the issue.

> **ATR:** "I think we come from a time where our former digital marketing manager was a bit protective about Google Analytics, it was his domain. He felt ownership and was not really good at sharing his knowledge, missing the thinking that if knowledge spreads, we all become better." (Appendix 2)

Also, there are signs that communication and data flow between coop.dk and its parent organisation is slow and cumbersome at times.

> **RLB:** "There are many different persons in big Coop that I have to talk to about it [data for reporting], and who each have their little area of expertise. If you ask for something more broadly, you risk being ping ponged around the system for a bit." (Appendix 1)

Three key employees appear to be central in this setup of information flow, and act as gatekeepers on vital data. These are the operations manager, the controller and the digital marketing manager. All were mentioned multiple times, by other interviewees regarding how they accessed data. These three employees serve a lot of different departments, and do not always have the time to satisfy the entire demand. This makes data seem far away for some people in the organisation, while the ones that are close to these key data-keepers do not experience that issue to the same degree.

> **RLB:** "I receive a lot of data from different people from everywhere in the organisation, which I have to connect and make sense of." (Appendix 1)

> **PE:** "No that is very true, that I am acting as a link in our business. Just as well as I serve as a link outward to the specialists in IT and Logistics (...)" (Appendix 8)

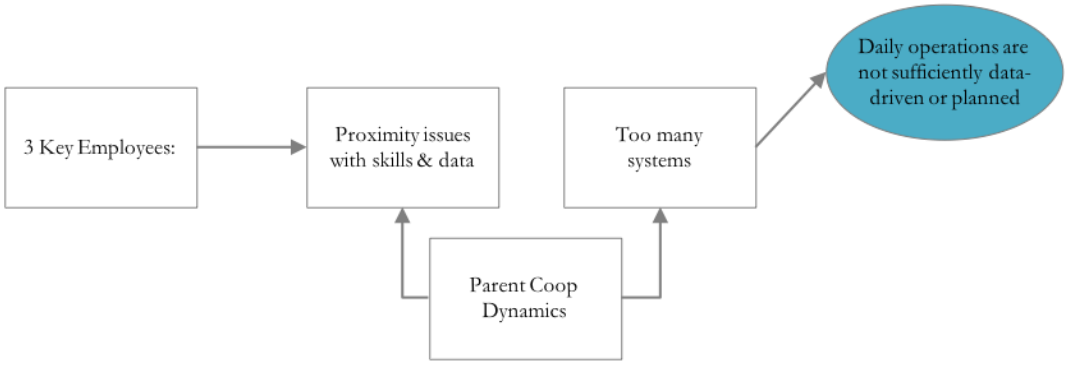
Also, here, the structural condition of Parent Coop and coop.dk/shopping plays a mediating role.

> **DL:** "I would like to see the organisation to be gathered (...) All this about being able to hear what is going on in marketing, in relation to digital campaigns and SOME, and what else have you. All this. To be close to Nicolai. I think Nicolai [digital marketing manager] is not that conscious about us, because we are not there. If we would sit there, it might well have been that he would have come over and asked, "Have you seen this and this?" or that there would be something he would have thought about." (Appendix 5)

These proximity issues with skills and data make some employees create their own systems for storing and analysing data, increasing the number of systems at place in the organisation and making data-driven deployment of strategy ever harder to navigate.

> **KMR:** "What data tools do you use in your everyday work then?"
>
> **PT:** "A lot of excel. We have about three-four too many systems at Coop. But I try to collect all of my calculations, analyses and forecasts in excel." (Appendix 4)

Thus, we see that proper data-minded planning suffers as too many systems and data that is sometimes hard to reach decays a common understanding of data. This stems partly from difficulties in implementing new technologies due to Parent Coop dynamics and partly from proximity issues faced by the individual employees as they do not always have easy and swift access to data, which is located at certain key employees.



The proximity issues can also be traced back to the fact that new systems have difficulties taking root after they are introduced. In some cases, the reason is a missing functionality, in other cases the newly introduced tools and systems are not intuitive enough, and it might seem difficult to communicate the added value of using new systems.

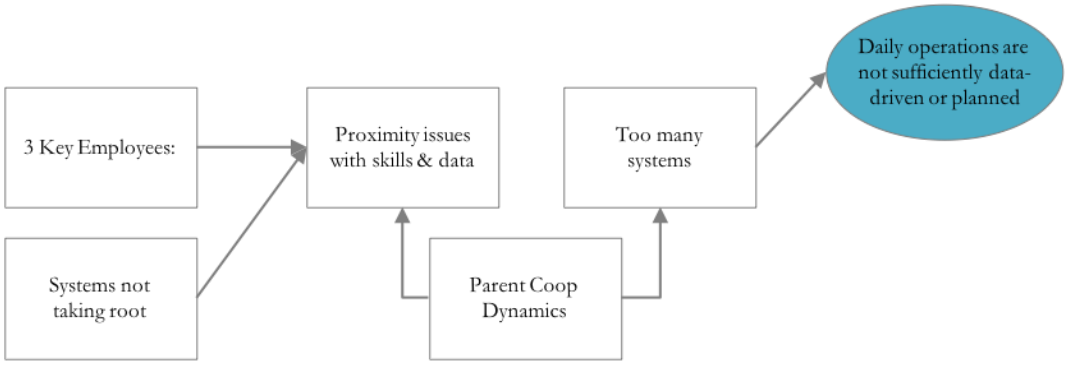
> **RLB:** "I could imagine that some of the tools, even if they are designed to be as simple as possible, still are not intuitive enough. When they are not completely intuitive, then it is easy for these busy people to just push them aside, because, 'it works fine without'. But this is definitely a challenge that needs to be tackled." (Appendix 1)

ATR: "The category people that I work with have, to my knowledge, not transferred to using this ABC Analyzer, because it cannot quite do the same things as the inventory report. I think the intention was for us to start using ABC Analyzer, I just think we did not succeed in doing so. The entire In-house-team still uses the old inventory report, because they can write a comment, and they use it to manage the assortment. (...) And just because they cannot write a comment in ABC Analyzer, they have not really been able to adopt it." (Appendix 2)

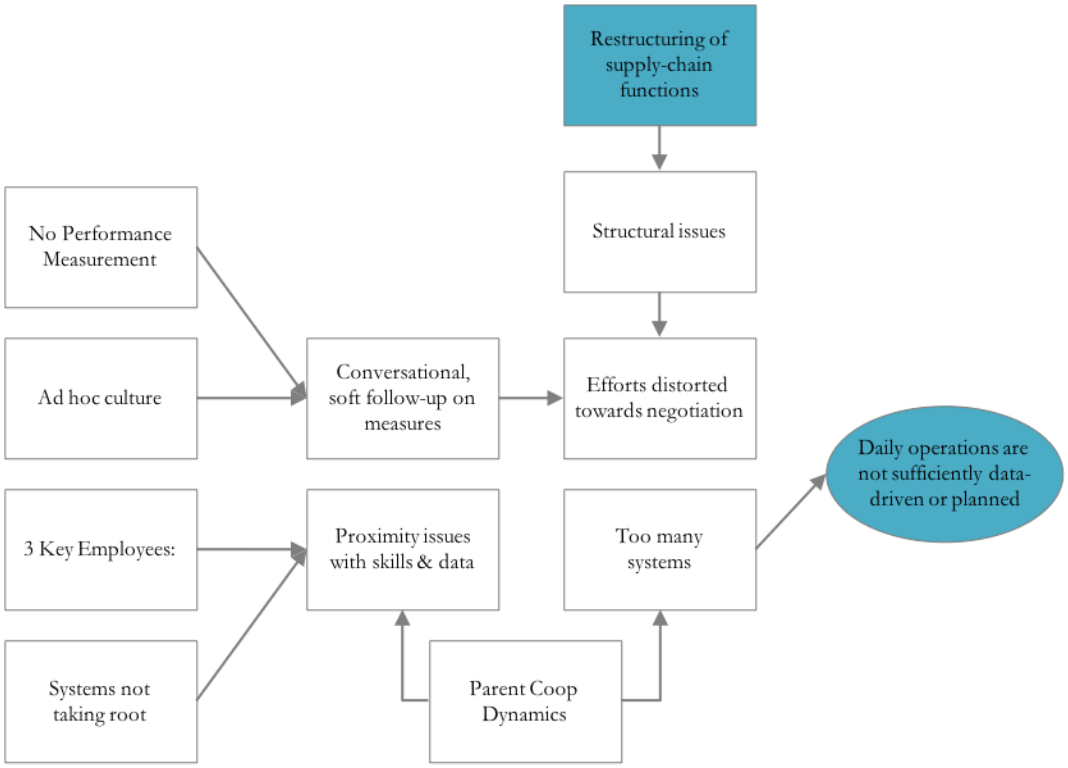
OR: "What is the biggest obstacle to business intelligence? Are people happy about the excel sheets?

NF: "Well I think that many of the people using these reports, that they don't know any better. They don't know that there is another option. But if it was set up for them and made easy for them (…) that would be preferable to everyone." (Appendix 3)

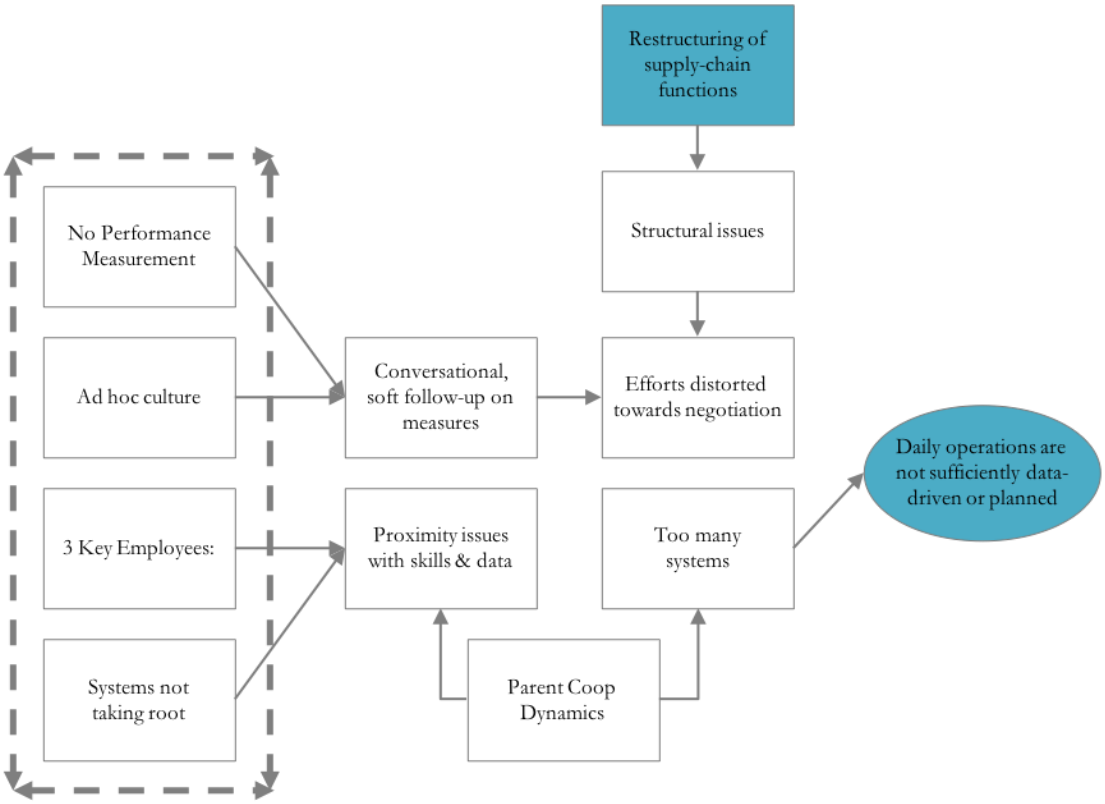
We thus see that the systems created by the data keepers to alleviate the proximity issues are seldom used the intended way. Thus, employees repeatedly consults the data keepers directly instead through the systems, meaning that the systems do not become part of a daily routine, and thus do not take organisational root.



Viewing what we have so far unveiled of our mechanism, we now have:



We will now make the argument that there is a reinforcing relationship between 1) the lack of an integrated performance measurement system, 2) the ad hoc culture, 3) the proximity issues with data being controlled by three key employees and 4) the tendency for systems not to take root. The lack of integrated measures dilutes structured actions and thus enables the ad hoc culture; it is also difficult to uphold such a measurement ideal when much knowledge and access to data is concentrated to a few people. Also, the lack of consequential measures makes monitoring and control of new systems harder to do, thus allowing them to exist, but not take organisational root. The ad hoc culture also arguably locks the three key employees in their roles as they spend time on minor projects rarely getting to communicate their data properly. Additionally, the ad hoc culture also means that every day is a new reality and thus systems quickly seem obsolete or not suited for a particular project. This reinforces the tendency for systems not to take root. Finally, as the three employees that act as data keepers are caught up in a lot of reactive ad hoc fire-extinguishing they lack time and resources to work on proper implementation of systems.



Tracing further back in the mechanism we speculated that the absence of a stricter performance measurement system could be attributed mainly to the unclear operationalisation of coop.dk's strategy. We found several pieces of evidence, which pointed towards strategy as being either very top level or *very* day-to-day.

> **JA:** "We are not clear on the boundaries and goals and direction and so forth. That makes us run in different directions and then you catch up too late. That is the evil. (…) You jump from having a budget where we agree on revenues of 400 million with that gross margin (…) and now I might exaggerate a bit, (…) but next discussed is what goods we have in the advertisement at what price. Argh, there could be a middle layer, where we take our budget and break it down." (Appendix 9)

When talking about the strategy, many respondents were quite unclear of its specifics, and even less clear about how to achieve the strategy's goals in practice. This has previously been sought to be remedied through vehicles such as a monthly meeting for sales and operations planning and other planning meetings. However, many of these are no longer in place.

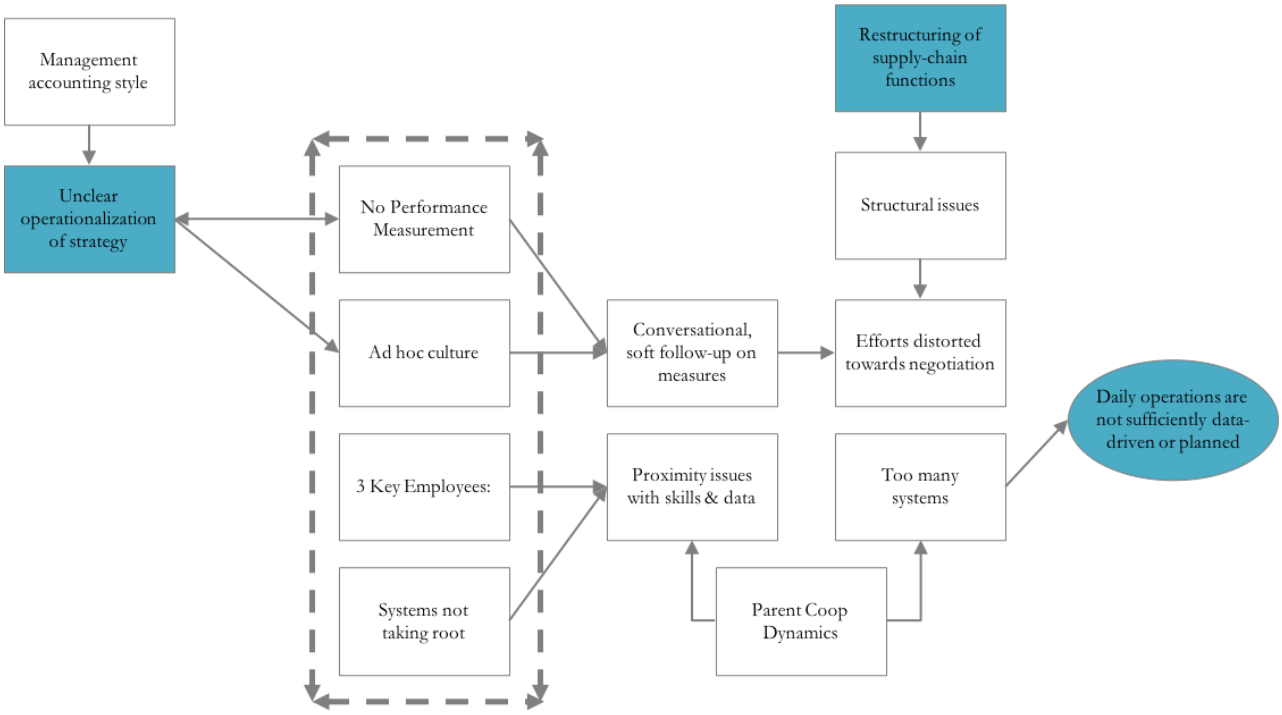
PE: "So far we have used S&OP to take the temperature on a monthly and daily basis."

KMR: "Is that a good solution? Is it working?"

PE: "No it does not. S&OP was intended to fill another role than it did." (Appendix 8)

ATR: "At one point we had monthly meeting where we collected learnings and insights. Those were discarded, but we should probably reinstate them". (Appendix 2)

Evidently, there is uncertainty about how to achieve the top level strategy, and there is no detailed plan for what performance drivers should be looked at when determining whether the organisation is moving in the right direction. A middle layer of strategy which operationalises the lofty goals into actionable middle and short-term plans could arguably restrain the ad hoc culture and enable the implementation and follow-up of new systems. However, establishing such a middle layer is constrained itself by the parts of the mechanism, which have already been discussed. That is, the reinforcing loop of the ad hoc culture, the data proximity issues, the measurement culture and the implementation difficulties for new systems. This suggests a further reinforcing relationship between cause and effect. Arguably this also relates to the leadership styles of the management, which is focused on dialogue as described in the above subsection of the mechanism concerning the conversational soft follow ups. We see some merit in including it here again, as it needs to be discussed in relation to a potential operational strategic layer.

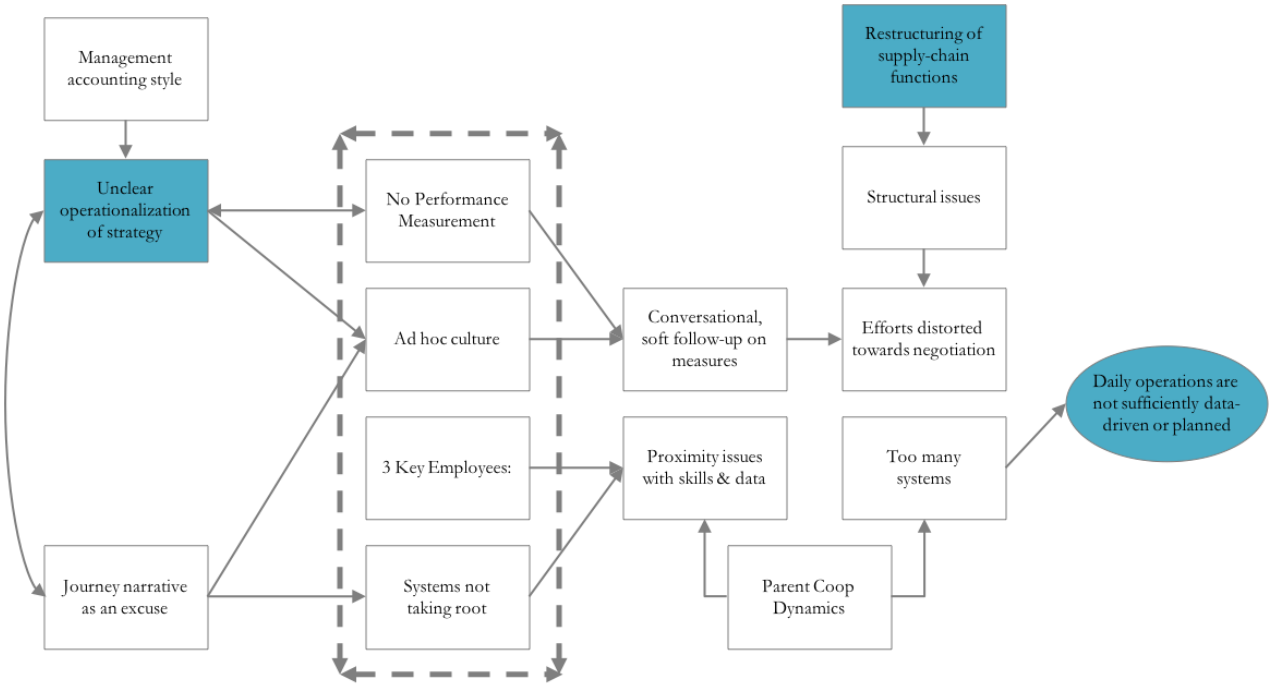


These conditions are furthermore legitimised by a journey narrative. When asked about the reason for the soft follow up on measures and the practice of solving short-term issues through dialogue, it was often mentioned that the organisation is on a journey to grow and expand. Therefore, unforeseen events are to be expected and it is difficult to keep people accountable under these circumstances. While this has some positive implications creating unity in the organisation it can also in certain situations be used as a convenient excuse.

> **ATR:** "It is not always about looking at numbers, but about that we are on a journey where small tasks need to be completed so that we can move forward and change." (Appendix 2)

> **NF:** "So in my view a lot of processes need to be optimised. We should become a top modern e-commerce because we have the size for it, we have the budgets for it, but you could say that it is a journey." (Appendix 3)

> **PT:** "It is very motivating for me that we are on a journey where we are moving forward." (Appendix 4)



Finally, it was hinted that some of the conversations regarding measures and goals were better in the past, when the company still had a CFO. The former CFO left in December of 2017 – three months prior to our initial data gathering.

> **PE:** "It should be data driven development (…) and in the past this was especially the responsibility of Gorm, our former CFO, who was very strong in that area." (Appendix 8)

> **DL:** "Previously we worked with Kristian Gorm and he would look at my budget and question it, and then we would go through it. (…) and we would get to a point where we both found it acceptable. Now that is just gone." (Appendix 5)

From this we infer that the choice to not hire a new CFO has resulted in a leadership gap regarding financial and operational measures, which can also arguably be linked to the lacking implementation of new systems. A strong new manager dedicated to strategic operationalisation within these fields, could perhaps remedy many of the unhealthy processes endowed in the mechanism.

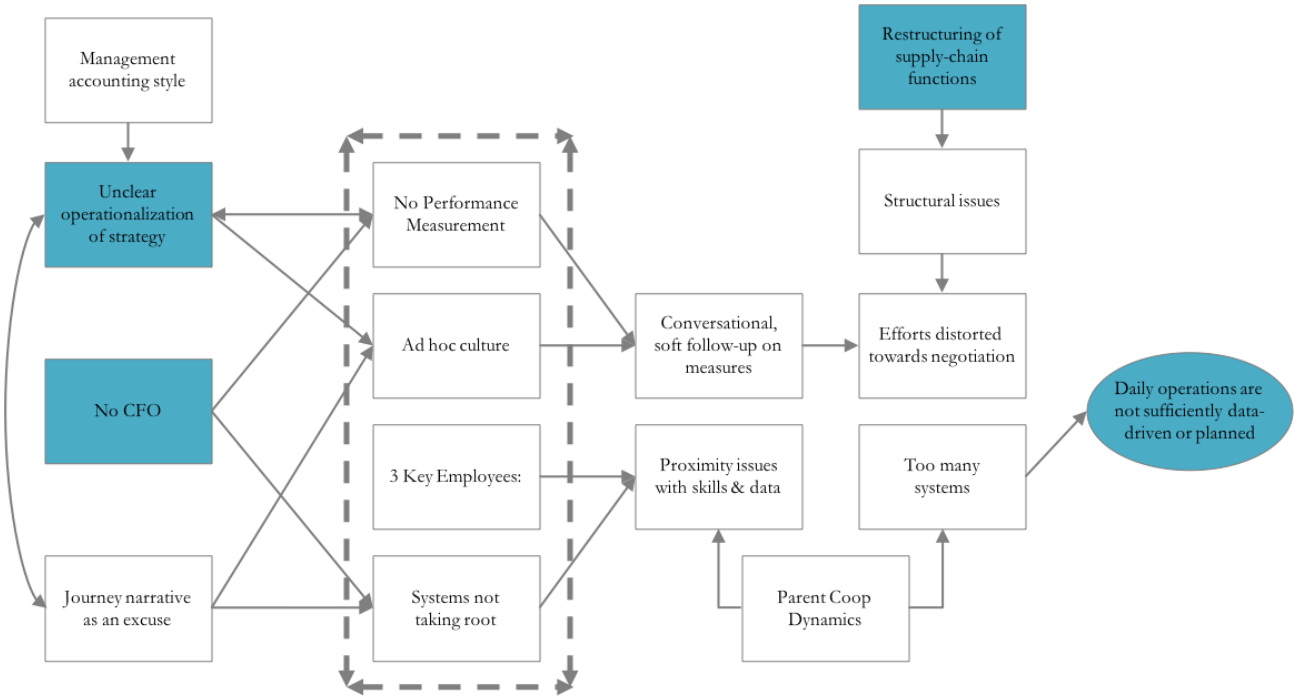


Figure 11: Empirical narrative I

The above represents the empirical narrative in full. We now revisit our theoretical lenses to scrutinise the links according to the extant literature, also evaluating the explanatory power that the theories hold over the mechanism.

5.5.2 Analysing the empirical narrative through extant literature

Our structural theoretical lens has some comments to make regarding the mechanism. In some ways it is a clear example of how the accounting system directs knowledge across the organisation (Zimmerman, 2017). We see this most clearly concerning the three key employees that create and collect reports and accounting data, allowing them to gain central positions and act as nexuses of knowledge in the organisation. As local pockets of knowledge are creating smaller knowledge structures in the system and as some employees are experiencing the data as inaccessible in proximity terms, we infer that coop.dk/shopping has an incomplete organisational architecture in terms of sending knowledge through the system. This also means that the knowledge network arguably is not sustainable in terms of creating connective capital (Ichiniowski & Shaw, 2009).Ultimately, if the problems with knowledge (accounting data) being concentrated in a few local pockets spread around the organisation are not fixed, they could mutate into additional integration problems and harm productivity and personal relations (Lazear & Gibbs, 2015). To facilitate coordination,

Lazear & Gibbs (2015) recommend among other things the alignment and standardisation of processes. As we have seen, the organisation is characterised by ad hoc processes with a low degree of standardisation and is struggling to streamline its operations. This leads us to infer that the low efficacy of MCSs is to a large degree driven by the nature of the organisation's processes. The matrix structure of Parent Coop, while certainly designed with synergies in mind, leads to coordination and communication problems, evident in the distorted behaviour and diplomacy efforts mentioned by some employees. Ultimately, the structure should be considered to alleviate some of these problems, either by moving units closer to the generation and collection of knowledge, or by spreading the knowledge (and potentially skills) out into the organisation. To do this, both accounting systems and strategy could be powerful tools.

The lens of decision rights and control deserves a small mention here as well. When managers want to enact strategy, they should consider whether the authority in the organisation is properly distributed and defined. This is also crucial if the company wants any new systems to properly take root. Here, the CFO role (or lack thereof) plays a crucial part, as it would be endowed with authority to carry out the enactment of strategy. Aghion & Tirole (1997) speculate various factors which determine authority. One of those is a proper PMI system, something which is currently not at place at coop.dk/shopping. Another is urgency, which several employees mention is coming about. Also, they mention lenient rules, which the ad hoc culture and the conversational follow-up to measures indicate. Thus, for proper authority to allow for systems to take root they could arguably reconsider whether a match between the agility of the ad hoc culture and the executive power of a less lenient, and more systematised culture in decision making is possible.

The lens of measures is highly interesting to apply to coop.dk/shopping. On one hand the organisation is certainly measuring a lot. Much data is collected and distributed through reports and conversations. Also, there are many meetings held to present the current performance to the employees and discuss it lightly. On the other hand, multiple employees mention a sheer lack of performance measurement and do not at all mention reward. This dichotomy ultimate leads us to infer, that while coop.dk/shopping certainly tracks and measures its performance, none of that is linked to the individual employees. Most evaluation of workers is then subjective and up for debate. This is potentially problematic as subjective performance measurement systems are certainly not simple to pull off (Hansen, 2012). Also, it indicates rot in one or multiple of the legs of the three-legged stool of organisational architecture – partitioning decision rights, performance evaluation, and reward & punishment (Zimmerman, 2017). The unbalanced organisational architecture thus leads to sub-optimal performance, as decision rights, measures and reward are not properly

linked. With the absence of proper incentive structures, a lot of employee effort is being allocated sub-optimally (Lazear & Gibbs, 2015). It was also indicated that there are no real consequences for employees that are not performing and that they thus face a *soft budget constraint* and can expect an easy bailout by talking it through with their superiors (Kornai, 2009). We observe this in several occasions, where employees do not face real repercussions for not meeting their targets.

Is the implementation of a rigid control and measurement system then the panacea for this? Not necessarily. The empirical record could also be a sign that the organisation might have deliberately chosen to work with continuous improvement as recommended by Deming (2000), moving away from performance measurement and focusing on the long term. This approach includes a deliberate focus on quality and the improvement of internal processes, which in turn leads to less waste in terms of man-hours, happier employees and more improved quality. All this would lead to increased customer satisfaction, which is believed to have a multiplier effect down-stream back into the organisation. For this explanation to hold, we would expect to observe indications of these deliberate considerations. We found no such evidence, and what we observe instead is that the organisation does in fact utilise measures, unclear and soft as they may be. Also, as is clear from the above empirical narrative, they work in a very ad hoc way, with sub-optimal work routines. This implies short-termism, and there is no evidence that the organisation has plans of moving away from this practice. We thus discard this alternative explanation.

As mentioned earlier, the role of accounting systems can take a diagnostic or interactive nature. The diagnostic systems mostly provide advice, whereas the interactive systems foster an organisational dialogue (Simons, 1991). We argue that the accounting systems, or perhaps mostly their implementation, have become a tad too interactive at coop.dk/shopping and that supplementary diagnostic systems are not able to efficiently communicate the strategy at a lower level. With the lens of design and implementation in hand we argue that the lack of an operationalisation of the strategy indicates that the proper strategic tools are missing. The accounting system can be such a tool (Skærbæk & Tryggestad, 2010), yet we found little evidence of it serving that function at coop.dk/shopping. This, as we theorise, is because of the managers' perception concerning the link between strategy and MCSs. Langfield-Smith (1997) criticised that strategy and MCSs have traditionally focused on the central management, neglecting the lower operational units. We argue that this is what we observe at coop.dk/shopping. As our empirical narrative shows, there are several calls for a layer of strategy beyond the top strategic level and the daily basis. This shortcoming means that the strategy cannot permeate the entire organisation properly, which fosters the ad hoc culture

and ultimately causes the efficacy of management control systems to be low. The fact that the CFO position is vacant further reinforces this problem, as it is this position that normally is best equipped to guide and implement data-driven decision making based on the overall strategy. This was mentioned several times by different employees, highlighting the expertise and skill of the former CFO, and how they are now lacking this crucial resource.

The low efficacy of MCSs could also be caused by differing views in the organisation as to the merits of accounting systems (Christiansen & Skærbæk, 1997), however, if this was the case we would have expected to find hostile stands to accounting in our empirics. We did not observe such attitudes, and generally our interview data indicates an organisation that sees the merits in data and control initiatives but is struggling to execute them properly on a daily basis. This potential alternative explanation is thus discarded. Another explanation could be the presentation format of the MCSs as Cardinaels (2008) highlights those as important. There are some indications for this from the makers of reports:

> **RLB:** "Maybe, well I think you could say that it is a problem that people are not completely comfortable with Excel sheets and what the different numbers mean. And that is to a varying degree, some have accepted it, others have not." (Appendix 1)

> **NF:** "I think that a lot of the people who use the reports do not know any better. (…) But if it was to be set up for them and they were told that you just have to log in here to view the different reports and filter everything. That would be preferable to all." (Appendix 3)

However, we think that the mechanism outlined in the empirical narrative above was more present across the case. We argue that the discussion about presentation formats, while it might have merit to discuss, is more of a minor contextual condition than a core mechanic. A small bias should be derived from the original literature review not touching firmly upon issues such as presentation, this line of enquiry was thus not pursued in fullest, considering the scope and remit limits of the process tracing exercise. A future study could ideally examine this with added scrutiny.

Further insights are to be gained by applying the lens of people to the mechanism. We have already mentioned how the perception of the manager is important for the interplay between MCSs and strategy, but it is also prudent to touch upon the insights from Macintosh regarding the accounting styles of the managers

(Macintosh, 1992). The ad hoc culture coupled with the conversational approach to measures points towards the ideal profit conscious style, but the tendency for system implementation to be unsatisfactory and for strategy to not permeate the entire organisation, resulting in a strategy-execution gap, indicates that the accounting style of the managers could be too flexible. Thus, we speculate that the managers have a non-accounting leadership style, where they are not properly guiding the data-driven execution of and follow-up on strategy. Addressing these elements of the management and coordination styles across coop.dk/shopping could help in fixing the efficacy issues of management control systems. Another insight is that role conflict and ambiguity can be linked to leader behaviour (Rizzo et al., 1970). This could illuminate potential conflicts and problems regarding knowing whom to address given the current lack of a CFO. If the remaining managers are not clear in who has overtaken the responsibilities formerly handled by the CFO it could cause conflicts. We did indeed see hints towards this in our empirical record, where the desired data-driven execution of strategy was attributed to the former CFO, and some work-processes are described to have been more optimal when he was still with the company.

After scrutinising various theorems, we are left with a rather clear explanation. Throughout our research and the empirical probing, this explanation was continuously confirmed. We will now sum up our findings regarding this first causal chain.

5.5.3 Summation of findings

One powerful tenet of process tracing is that with the process outlined we can infer the most important parts upholding it and guiding the outcome under scrutiny. For clarity we have re-added the process below, where we have outlined what we argue to be the central part of the internal mechanism leading to a low efficacy of management control systems at coop.dk/shopping. We argue this to be the reinforcing loop that takes a poorly operationalised strategy and translates it through:

- a lack of measurement
- an ad hoc culture
- a concentration of data at three employees
- a tendency for new systems to not take proper root.

As these factors reinforce and reinitiate each other, the problems are likely deeply embedded and any attempts at alleviating these issues should thus be handled with care. We will discuss some ways that we believe could mend these concerns in our discussion in chapter 6.

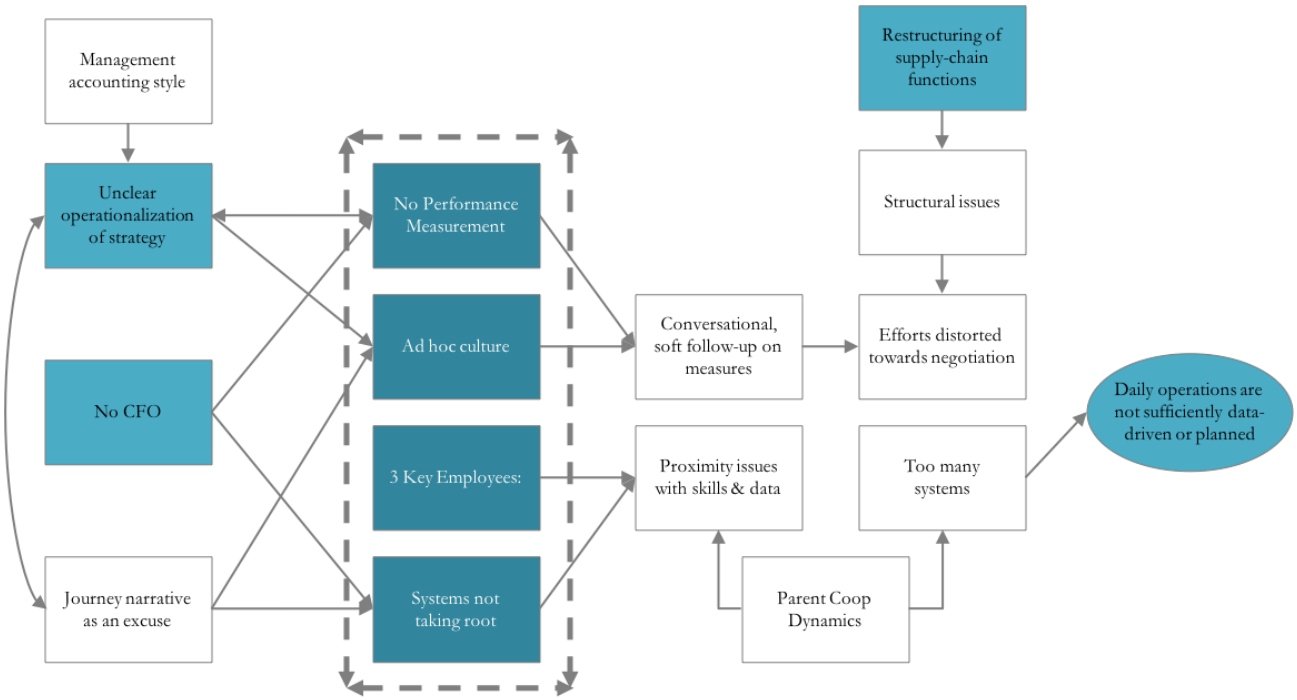


Figure 12: Empirical narrative, key links highlighted

Another way of viewing the process is by separating it into the parts that are entities performing actions in the system and contextual conditions. Below we have performed that separation. This gives a clearer presentation of the causal forces linking cause to outcome:

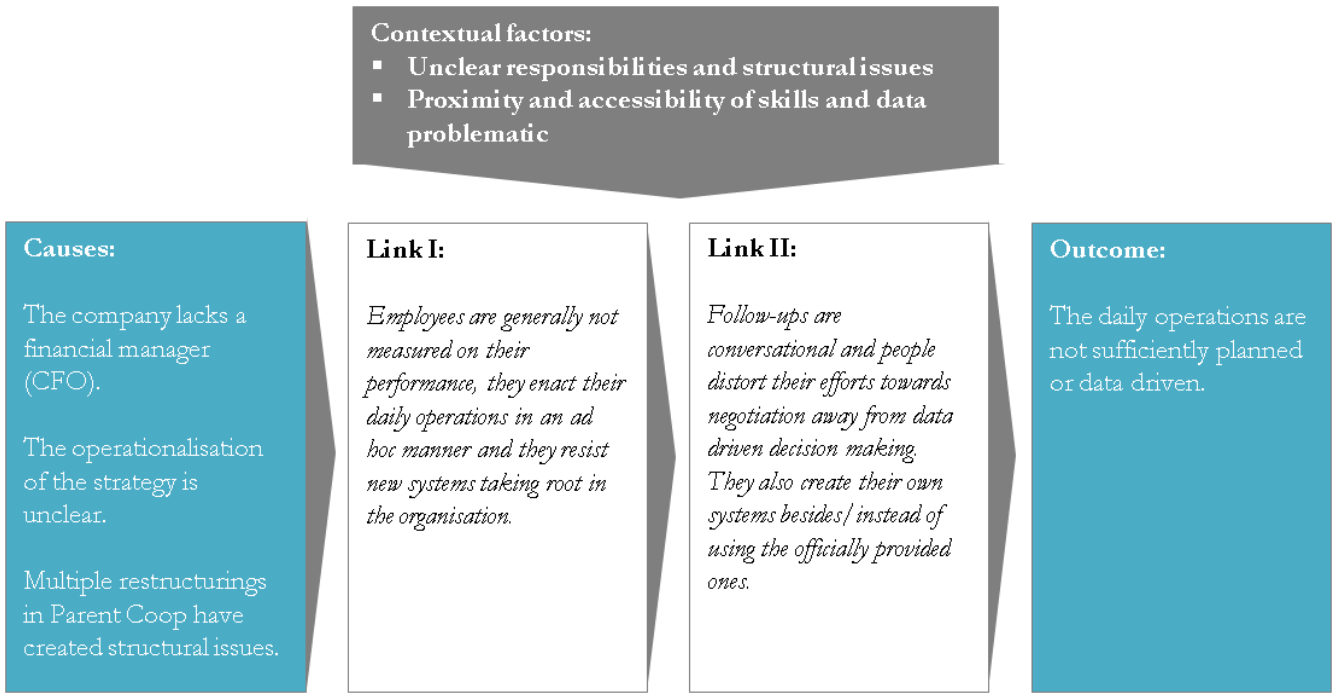


Figure 13: Causal chain I

Overall, we have in this section traced the following causal chain: At coop.dk/shopping there is an unclear operationalisation of the company strategy alongside a prominent lack of a CFO, and multiple restructurings in the organisation. These causes enable an unhealthy loop where people 1) are not measured for their performance, 2) enact daily operations in an ad hoc manner and 3) neglect to use and sustain new management control systems. In a context riddled with proximity issues, managerial behaviour removed from performance measurement, and various Parent Coop dynamics, these actions result in a conversational follow-up on measures and initiatives, distorted effort allocation and an abundance of different systems. Ultimately, this results in a situation where planning and data driven actions manifest to an unsatisfactory degree, causing management to perceive their management control systems as inefficient.

Most of the above deals with inside coordination at the coop.dk/shopping's headquarters. We will now move further out in the supply-chain attempting to uncover any mechanisms in that area, which could potentially cause low efficacy for management control systems.

5.6 Causal chain II

This chain of process tracing goes beyond the internal offices of coop.dk/shopping and moves into the wider Coop supply-chain. This means that the use and communication of accounting data through man-

agement control systems is considered for the entire procurement unit - including the out-house categories, the warehousing setup and the logistics unit. While procurement outside of coop.dk/shopping is a central office function, warehousing and logistics is the responsibility of Coop Logistik, the logistics subsidiary of Parent Coop. The part of warehousing that is handled by PostNord is not considered here due to the unavailability of opportunities to gather empirical data. Whether the same mechanism is at play there is thus a subject of further research and we will make no inferences regarding that. Regardless, there is plenty of valuable knowledge to derive from the part of the supply-chain under scrutiny here.

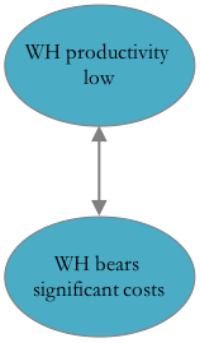
5.6.1 Empirical narrative

First of all, we shall delve into the central outcome of this track; the fact that the warehouse cannot achieve its full productivity potential and that it is incurring a lot of uncontrollable costs. Once the causal chain is traced in full, it will be apparent how this influences the efficacy of management control systems at coop.dk/shopping.

Several employees mention that the inventory is building up and that coordination between the warehouse and coop.dk/shopping is somewhat troublesome. The warehouse essentially has two sections, one dedicated to coop.dk/shopping and one dedicated to the brick and mortar stores. Warehousing experiences issues of low productivity and incurs several costs due to events and mistakes further up in the supply-chain. A clear clue to these issues is hinted in a test of master data, where discrepancies between 10-50% were revealed. As the operations manager for the warehouse Morten Boye puts it, these mistakes are harming his warehouse financially as the warehouse either pays for corrections or pays for the mistakes that will happen due to proper corrections not being made. He is in this dilemma, as it is hard for him to send the bill for the mistakes upwards in the system. This is because his unit could be alienated from the supply-chain of coop.dk/shopping. As the operations manager of coop.dk puts it, they have dabbled in outsourcing the warehouse earlier and were just about to. This, the warehouse manager is aware of:

> **MB:** "We are a service function delivering a service to coop.dk. If we are unable to do so in an efficient manner, they will take their business elsewhere, and we will have to reduce our number of employees significantly." (Appendix 6)

Thus, he often ends up with the bill no matter what, and therefore prefers to pay. The mechanisms leading to this unsatisfactory outcome for everyone included is what we shall now focus on uncovering.



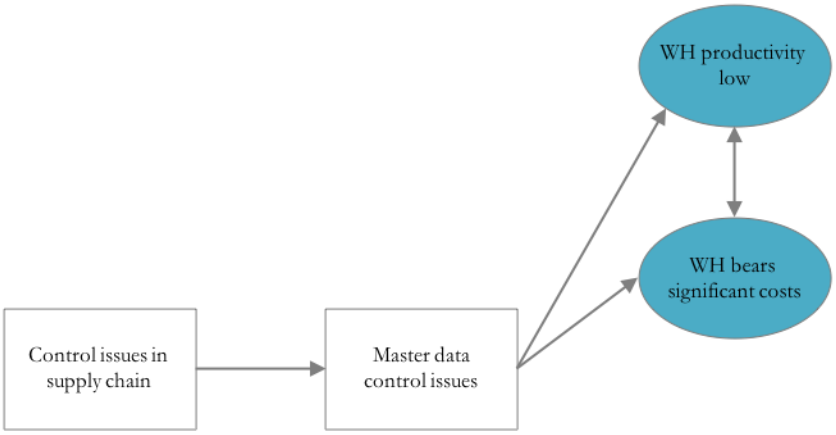
We initiate our empirical search tracing back through the concrete example of the control issues with the master data. Applying our lens of decision making and control, we can see why such a process is troublesome. The warehousing unit is not responsible for providing correct master data, this function is located elsewhere in the supply-chain. Nonetheless, they are the ones incurring a cost. Thus, others impose externalities on the warehouse. This violates the controllability principle (Zimmerman, 2017), which states that a manager should only be held accountable for factors which he can control.

> **MB:** "But we are the ones to bear the consequences if the master data is incorrect."
>
> **KMR:** "Yes, so you are punished for something outside of your control?"
>
> **MB:** "Precisely." (Appendix 6)

Sensing that we were unto something, we probed the organisation for potential additional control issues and found indications for the existence of several such. Among these was a tendency for pallets to arrive in volatile patterns, which strained capacity and lowered productivity.

> **MB:** "When receiving goods [at the warehouse] it costs us something per pallet to handle it. Regardless of whether there are 10 or 5000 items on that pallet. Previously we received lots of pallets, but with very few items on each. A given product would arrive Monday and then again on Tuesday and on Wednesday. That results in terrible handling costs for us." (Appendix 6)

> **CA:** "Our warehouse is filling up (…). It is a tough one to crack, who has the responsibility for the inventory value; it should be a supply-chain ideally." (Appendix 7)



These control issues mainly appear to stem from the problem of who had the decision rights for the warehouse and the inventory values. This issue kept coming up multiple times with different interviewees, responsible for widely different things in the organisation. In sales, they do not feel responsible for the inventory as they are not the ones procuring it and hence causing it to grow out of hands. In disposition they state that while they order the goods in practice, they do not have the responsibility, the category does. The category does indeed take some responsibility for the inventory but refers to warehousing for the processes. In warehousing they feel that they cannot get a clear answer of whether the responsibility for the inventory and the control issues lie with coop.dk or with Coop Logistik and thus they end up bearing the costs. So even though procurement actively takes responsibility, that is not reflected in the grander organisation and warehousing ends up ultimately paying the costs. Finally, the finance department of coop.dk has no direct contact with the warehouse and thus from these multiple observations we infer that the question of who has responsibility over the warehouse is ambiguous.

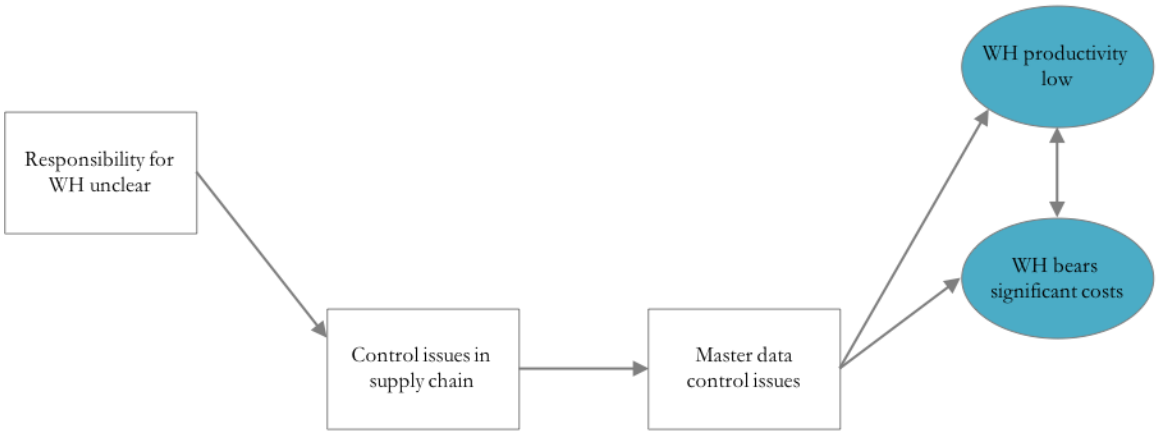
> **CA:** "As of now, it [supply-chain functions] is placed at several different places, that is not ideal no." (Appendix 7)

> **ATR:** "As I see it I cannot be responsible for the inventory. I do not procure the good, I did not order it." (Appendix 2)

MB: "And who is responsible for changing these procedures? That is left for uncertainty as some of it is in coop.dk and some is in logistics, and who actually has the responsibility then?" (Appendix 6)

JA: "The economic responsibility for the inventory costs should be placed in the category." (Appendix 9)

As responsibility is unclear, it is difficult to communicate problems and determine who should solve them. We thus argue that the control issues in the supply-chain are in fact issues of responsibility.

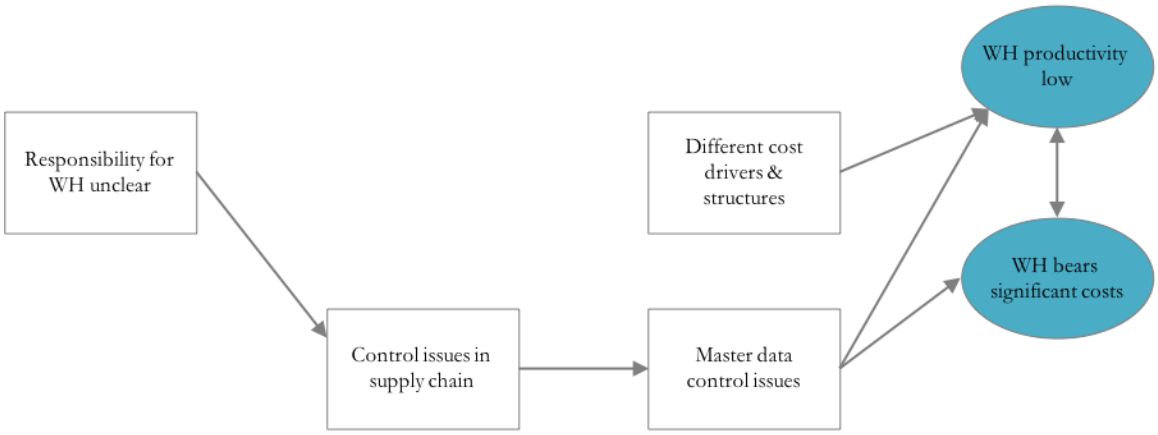


But the control issues were not the only problem, which we could trace back to the murky responsibilities. Another problem for the warehouse, which was mentioned repeatedly, was a difference in the language and measures of how business is conducted.

MB: "The biggest problem for this warehouse is that everything is measured in DKK at coop.dk (…), but that makes little sense for us. Here, everything is measured in litres." (Appendix 6)

JA: "Here we are happy amateurs, I think. Something that causes disagreement and frustrations is that we measure in different units [litres and DKK]." (Appendix 9)

Given that the growth strategy of coop.dk/shopping is made in DKK, it does not translate well internally in the warehouse, which causes some ugly surprises, harming productivity. An example of this is large goods which take up a lot of space and thus incur sizeable handling costs and rent. When these goods have a low cost of goods sold (COGS), they can end up looking cheap to procurement, but expensive to warehousing ultimately resulting in low margins.



It is heavily hinted from warehousing that there is a lack of understanding from coop.dk/shopping. This is experienced at the e-commerce end as well. Here, procurers are experiencing losses on purchases and sales that were sound when talking DKK but show negative margins when translated into the voluminous world of the warehouse.

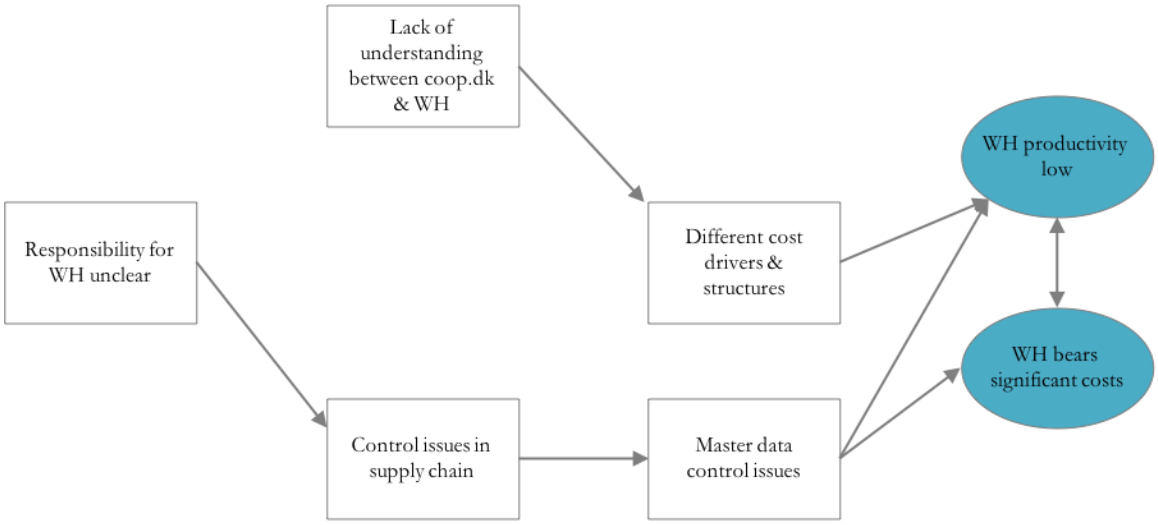
> **MB:** "There is certainly some sort of dissonance between the understanding here in logistics and at coop.dk." (Appendix 6)

> **DL:** "What I am missing is that when I have purchased a good and know that this is the cost for coop.dk, then I lack all the costs between that cost and the sales price." (Appendix 5)

> **PE:** "But I'm also challenging logistics on this understanding. It does not help anything that all they want is pallets; if we could send everything out on pallets we would be world champions. (…) But that is not how it works here." (Appendix 8)

The operations manager at coop.dk also states that there is a feeling that the warehouse is not compatible with the e-commerce reality, as it was not planned and dimensioned to be so. In general, there thus appears to be several issues connected to a lack of understanding for each other between coop.dk and the warehouse.

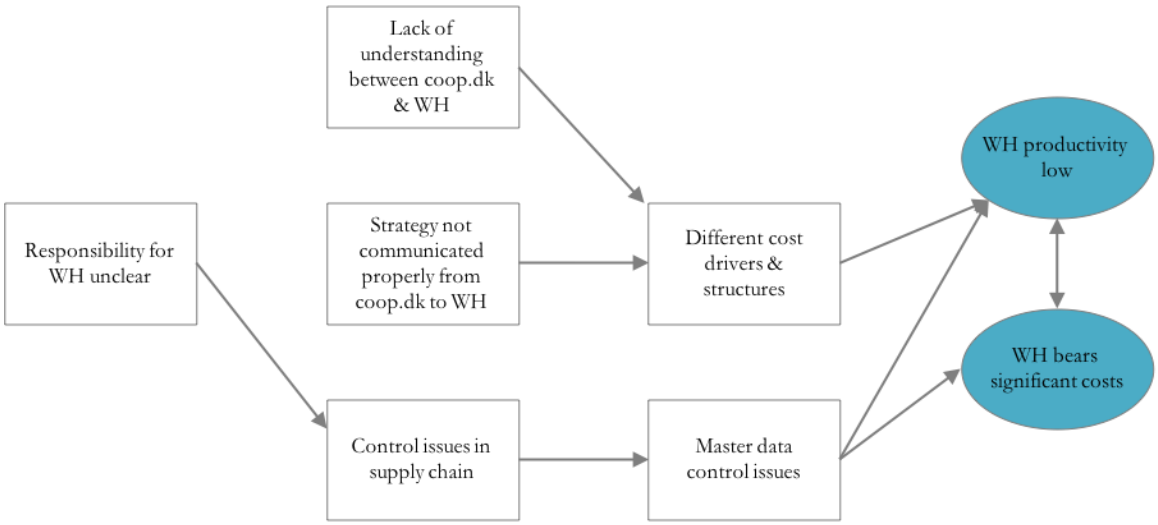
> **PE:** "But all of that is because of the fact that they were not originally dimensioned to be an online warehouse." (Appendix 8)



The issue with the cost structures has another source though. As mentioned, the growth strategy of coop.dk is written in DKK and is thus of little use to the warehouse. How then, is the strategy communicated to the warehouse? We began suspecting that it was done so poorly in operational terms. The warehouse knows that there is a strategy and that its operationalisation is planned between the management and the procurement and sales units (poorly, as we argued in Causal chain I). However, it is not properly communicated to the warehouse. They thus feel a lack of control as they know that the inventory will increase in the future, but not the litre/volume implications of this increase. We began to suspect that the strategy was not geared for the high degree of interdependence embedded in the matrix structure of Coop. Both the head of procurement and the head of warehousing agree that this is not currently operationalised and that the operations have not been translated into volume, the cost object of the warehouse, either at a daily or strategic level.

JA: "So we are the ones not defining a proper basis for collaboration, but I agree that the frustration exists. And then we say (…) "Come on man! Get those goods in the warehouse, so we can get them out to the customer" and warehouse says, "God damn it the roof is about to pop off!" and that is not appropriate." (Appendix 9)

MB: "It [the growth] seems uncontrolled, and that scares me a bit. It would be something else if we knew what we would get in the summer of 2018, because then we could plan for that." (Appendix 6)



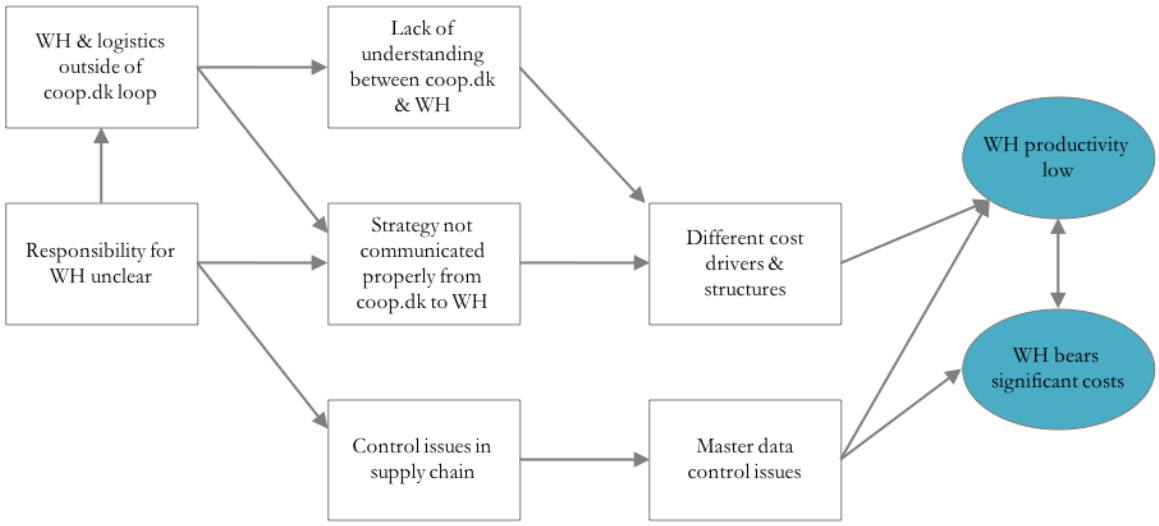
So why then is there a lack of understanding and strategic communication? We already mentioned how the organisation lacks a proper CFO and how that is troublesome for the execution of several managerial issues. Also, through our interviews with the procurement and sales personnel we heard mostly praise for the communication between procurement, sales and marketing. Thus, integration problems can be solved at coop.dk and the loop of marketing, sales and procurement proves this.

ATR: "The strongest fields of collaboration for me are marketing and category."

KMR: "So who is your main collaboration with?"

DL: "Sales support (…) and then it is mainly Marie Kampman who is the sales manager."

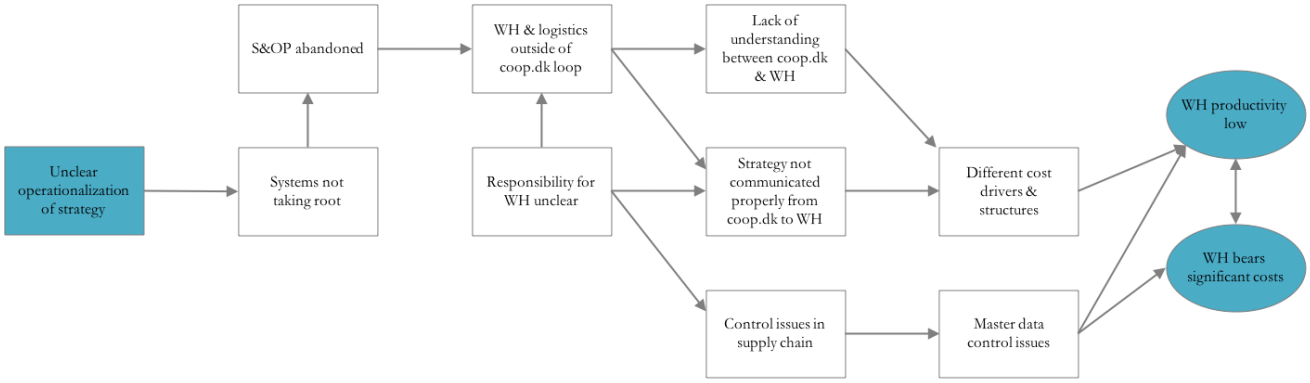
Both warehousing and the departments that make up the loop, however, admit to having sparse direct contact, and when they do it is mostly to solve problems, not to plan ahead, communicate strategy or enlighten one another. This lack of a forum to raise such issues is likely a part of the mechanism leading to the problems. Also, the uncertainty regarding responsibility makes it hard for both sides to find an entry point to initiate communication.



Why then is the warehouse out of the coordination loop? Previously a sales and operations planning (S&OP) forum existed. This, however, was abandoned as it mutated into something unintended and did not become the vehicle for coordination that it was meant to be.

> **PE:** "So far we have used S&OP to take the temperature on a monthly and daily basis."
>
> **KMR:** "Is that a good solution? Is it working?"
>
> **PE:** "No it does not. S&OP was intended to fill another role than it did."

Thus, the warehouse has been without a system to facilitate coordination. This could relate to the tendency for new systems to be started, but not properly implemented, which was thoroughly discussed in section 5.5. A new operationalisation in S&OP 2.0 has been announced by the operations manager. As of now, however, that has yet to be implemented.



This, however, does not explain the unclear responsibilities. Given our lenses of structure and decision making, we know that the organisational architecture is a vehicle for redistributing influence (Bariff & Galbraith, 1978), partitioning authority (Aghion & Tirole, 1997) and decision rights (Zimmerman, 2017), thus we speculated that we would find our evidence in changes in that architecture. Probing the data for evidence of changes we found several cases of restructuring in the Coop supply-chain. At the original transition into an online store, the procurement unit was structured in a way so that it was split between Parent Coop and coop.dk/shopping, creating an awkward situation with multiple bosses and unclear mandates. Furthermore, the disposition was later restructured to leave procurement and become a part of logistics. This, as a logistics official presents it, is not suitable, as the responsibility for the contracts is placed in procurement, whereas the practical purchases and resupplies happen in logistics. This also makes it hard for the warehouse to know whom to approach for issues of strategic objectives and coordination of inbound logistics. Finally, the master data, which is crucial to warehousing, has been restructured into a separate Shared Services office. Thus, multiple restructurings in the supply-chain seem to be behind the ambiguities and confusion regarding responsibility and coordination.

The main arguments in favour of the restructurings are gains from specialisation and synergies. However, the new structure seems to incur severe costs in the form of externalities, which are inadequately addressed.

> **DL:** "I would like for us to be one unit again. But sadly, I do not think it is going to happen.
> (…)
>
> **KMR:** "But you think that you could run a better store if you were situated there?"

DL: "Yes." (Appendix 5)

CA: "You have an inventory, so those purchasing the goods should have the responsibility for inbound logistics and that the inventory is kept low. Right now, that is located at multiple places, and that is not appropriate." (Appendix 7)

MB: "Disposition and procurement was moved to inbound logistics. You have probably heard of that. And that has created a lot of noise." (Appendix 6)

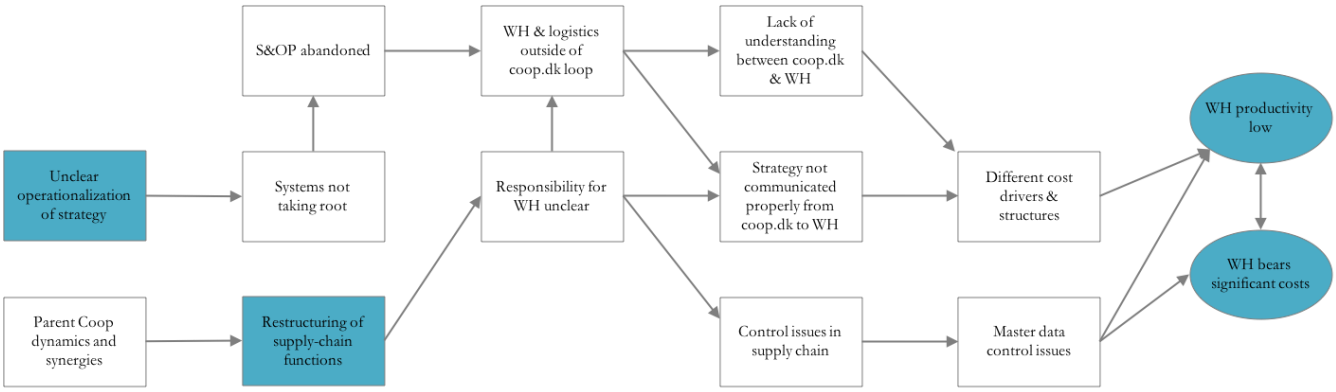


Figure 14: Empirical narrative II

The above figure 12 thus presents the empirical narrative in its entirety.

5.6.2 Analysing the empirical narrative through extant literature

Having established the narrative of our mechanism in full we now apply our lenses to it, in an attempt to illuminate why and how it is creating unsatisfactory processes.

The structural lens is very applicable here, as we see a clear example of how the information system redistributes influence and alters decisions across the organisation (Bariff & Galbraith, 1978). We also see how accounting decisions such as the cost drivers and master data are hugely impacted by the structure. The structure here is partly responsible for externalities and control issues of the supply-chain, indicating that the management control systems have little efficacy in taming the structure. This is because data and information flows through many parts of the structure, making responsibility hard to place and ultimately

ending up at the warehouse floor. Here, the employees have trouble utilising the information, as it is presented in units which are not translatable to their daily operations.

In the empirical narrative we saw how the organisational design fosters several externalities for the warehouse. The decision making lens shows us why this mechanism is then problematic as it makes planning hard, which is otherwise a good way of internalising externalities (Hansen, 2010). Also, another way of mediating the externalities could be role perceptions (Burkert et al., 2011), but these are hard to get a firm grasp on, as roles are widely distributed and found in multiple parts of the organisation. One example of this is how the split of disposition, procurement and master data makes nobody take responsibility for the externalities in the end.

The distorting nature (Hansen, 2010) of the two cost objects (litres and DKK) has arguably been shown to distort efforts, create uncertainty, and lead to a lack of strategic congruence. Jensen's (2002) argument that a single score should be formulated to create congruence is then worth considering. We argue, however, that it would not be possible to find an overall measure of the supply-chain as operations, warehousing and procurement all acknowledge that both cost objects are highly relevant to the business. It was also speculated that goals foster strategy deployment (Locke et al., 1981). Thus, one could argue that the lack of clear goals is what is bringing the strategic uncertainty across the supply-chain mechanism. However, as both procurement and warehousing do measure themselves (albeit on different drivers), we argue that the culprit is more likely the lack of understanding. This is because the varying cost objects arguably stem from the structure and decision-making distributions. Thus, the low efficacy of control systems in the supply-chain is more likely related to structural and control issues than the actual measures being used.

Langfield-Smith (1997) highlights how strategy must not become merely a vehicle for central management and then not go further. We argue that this has happened at coop.dk/shopping in its supply-chain. Partly because of the management style discussed earlier, but also because the proper coordination channels do not exist. This causes the warehouse to be uncertain about strategy and the procurement manager agrees that strategy in the organisation lacks a planning middle layer. It has furthermore been said that the alignment of strategy and accounting systems must be done to generate value (Ittner & Larcker, 2001). Thus, our process tracing has shown that part of the low efficacy can be explained by the absence of a middle layer of strategy, found by following the fingerprints throughout the supply-chain. If these issues should be remedied in the future, this should be taken into account, e.g. when designing S&OP 2.0.

Could other theories explain the patterns observed in the empirical record with more explanatory power than what we have outlined above? Well, management accounting is a broad discipline and even though we found responsibility and control issues these could have other theoretical explanations. For example, they could have been related to the infighting between different programs in the organisation (Callon, 1984). We argue that there is little that points towards this in our interviews. The interviewees expressed no narrative of conflict when discussing the issues of the supply-chain; they instead pointed towards common problems and not to the views of opposing forces as blocking solutions. This heavily implies that opposing programs do not exist. A small counterargument exists in disagreements on where the procurement unit should be placed. People feel strongly about the issue and certainly here different programs exist. However, all interviewees agree that the current setup of the overall supply-chain is harmful, thus the mechanism stands, with or without opposing programs as the factors outlined above exist regardless of where procurement could be located in the future.

5.6.3 Summation of findings

The key nodes in the supply-chain mechanism as we have argued above are the responsibility issues and the lack of coordination outside of the coop.dk loop resulting in insufficient understanding.

Concerning the efficacy of management control systems at coop.dk/shopping we thus argue that their efficacy and ability to communicate data through the supply-chain is harmed by:

- A closed coordination loop that largely excludes warehousing and logistics
- A lack of understanding between coop.dk and the warehouse
- Uncertainty about responsibilities in the supply-chain

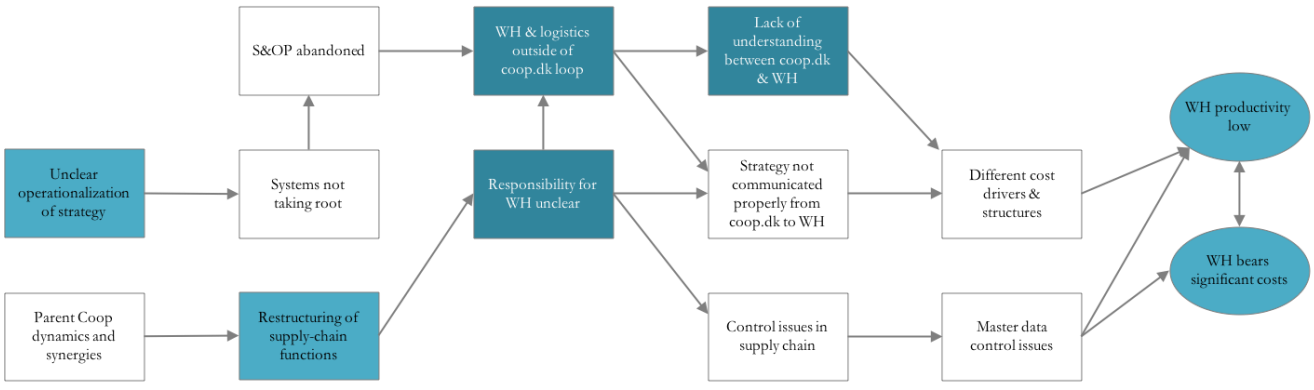


Figure 15: Empirical narrative II, key links highlighted

Which parts of the mechanism are then entities doing an action and what is context? In figure 14 they have been separated to grant deeper understanding into the causal mechanism in its context.

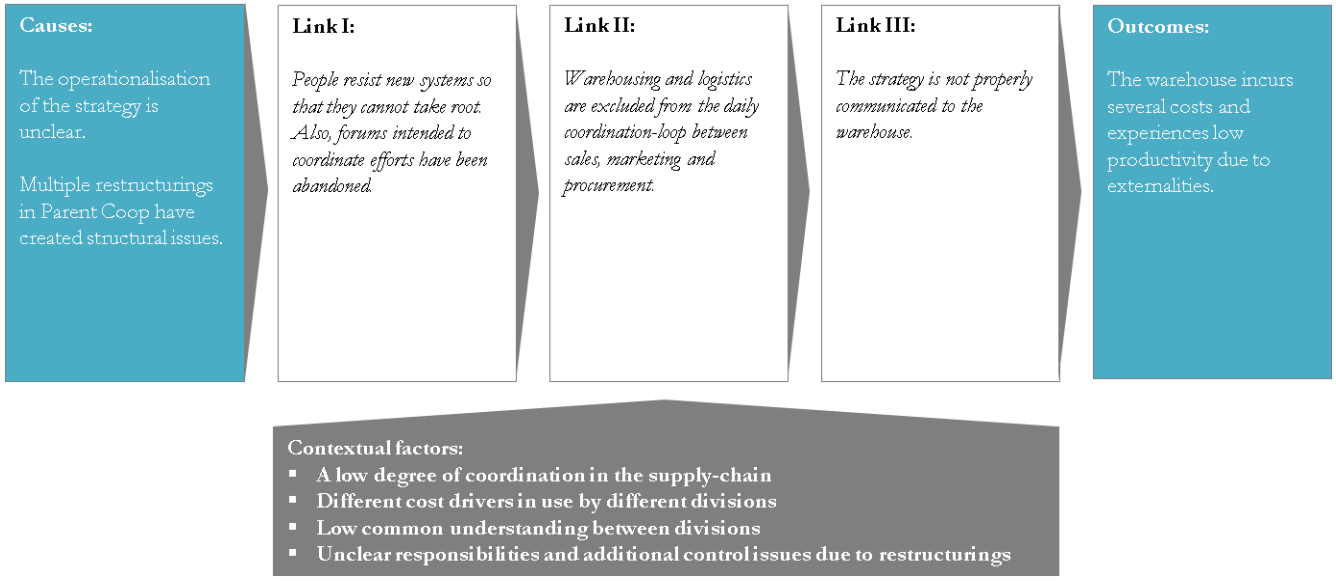


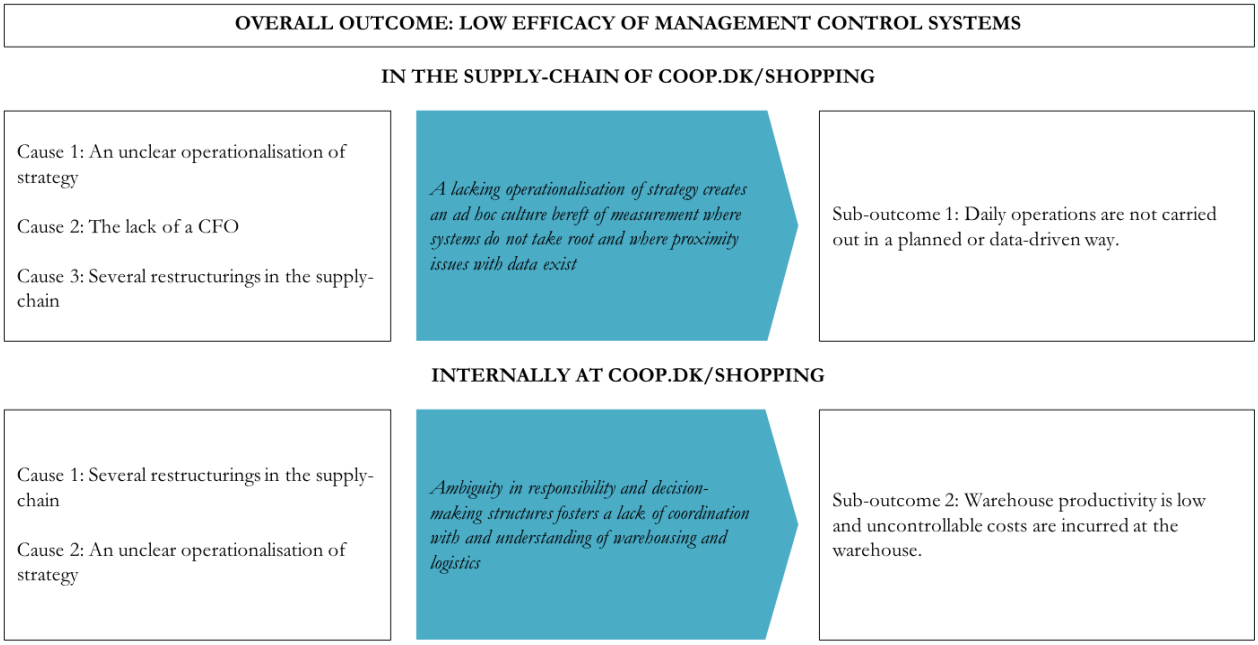
Figure 16: Causal chain II

In sum, an unclear operationalisation of the company strategy causes new systems to not take proper root as discussed in detail in section 5.5. This, alongside the discontinuation of former coordination forums has excluded the warehouse and logistics from the coordination loop of coop.dk/shopping and fostered a context characterised by a lack of understanding and the use of different cost drivers. That means that the strategy has not been properly communicated to the warehouse. Furthermore, several restructurings in the supply-chain have created a context where control and responsibility issues exist. Overall, this creates multiple issues and imposes externalities upon the warehouse, harming productivity. Ultimately, this causal chain showcases an organisation where management control systems are badly communicated and where the responsibility for accounting measures and data is unclear. We argue that this, in the end, causes the management of coop.dk/shopping to perceive their management control systems as having low efficacy.

While process tracing is excellent at uncovering problems and peculiarities, we have only to a limited degree discussed solutions and ways of mediating the outcomes. We will give some recommendations regarding that in chapter 6: Discussion. This will be much more qualified now that our process tracing is complete, and it would not have been prudent to do it before.

5.7 Causal model

In this chapter we instantiated a process tracing exercise to uncover the causal mechanisms responsible for the low efficacy of management control systems at coop.dk/shopping. We started out by initially defining causes and outcomes and gave a preliminary understanding of the mechanisms at a minimal glance:



Then, through a deeper process tracing exercise with a full empirical narrative and the application of six theoretical lenses, we came up with two processes outlined in depth. These have been synthesised into the final causal framework seen below:

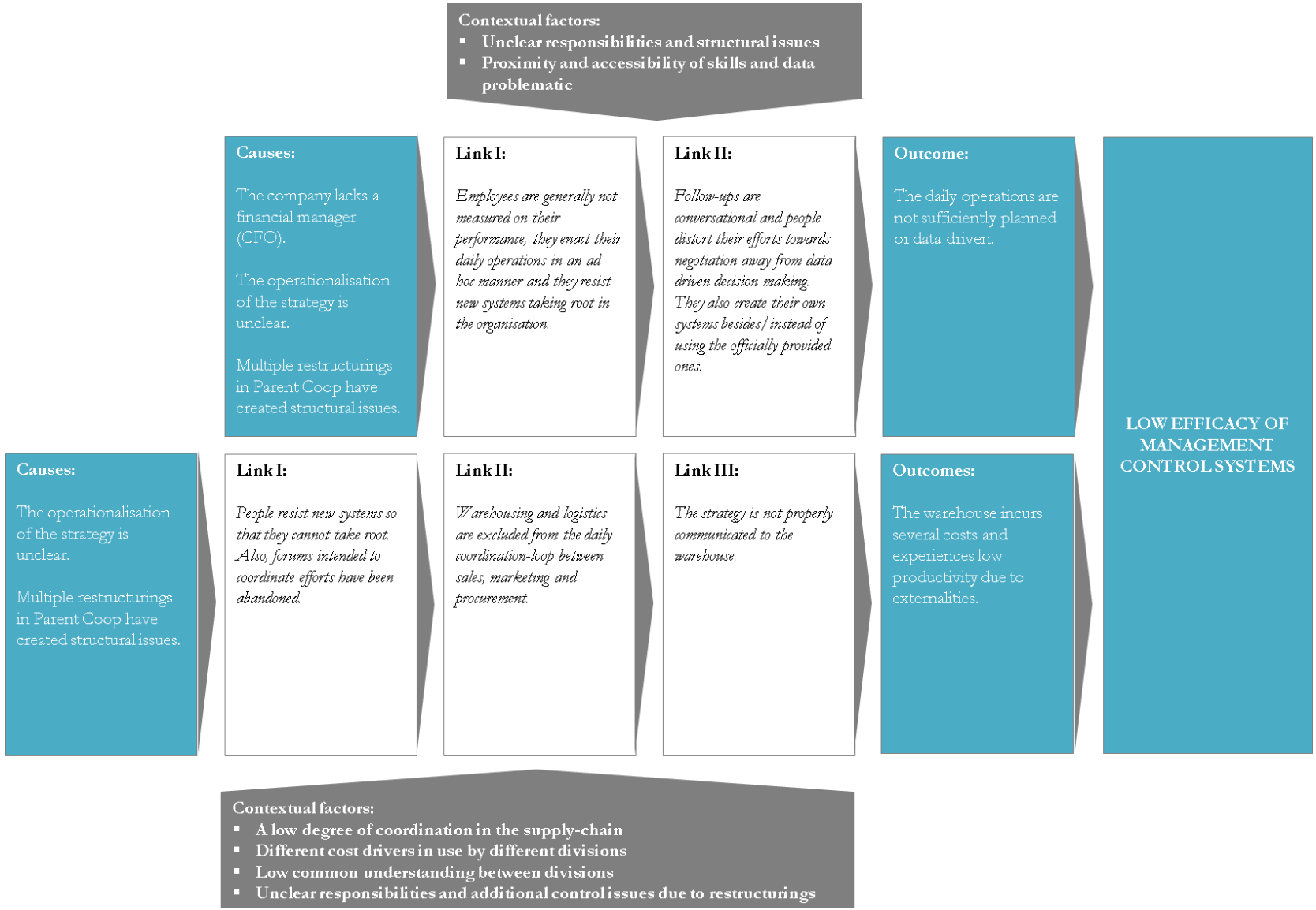


Figure 17: Final causal framework

The above has been cleaned of the observable manifestations of the mechanisms and is thus a more abstract representation of the core mechanisms leading to a low efficacy for management control systems at coop.dk/shopping. These are, in no particular order:

- The lack of a CFO
- A poorly operationalised strategy
- Proximity issues regarding skills and data
- An ad hoc culture with little consequential performance measurement
- A tendency for new systems not to stick
- A closed coordination loop that largely excludes warehousing and logistics
- A lack of understanding between coop.dk and the warehouse
- Uncertainty about responsibilities in the supply-chain

Having concluded our process tracing exercise, we will now thoroughly discuss our findings, their limitations, and their implications for the academic field of management accounting and for the organisation of coop.dk/shopping and its parent.

6 Discussion

Through our analysis we have shown the efficacy of management control systems at coop.dk/shopping to be contingent on the causal factors outlined above. We will now discuss these findings in terms of their limitations, their managerial implications, their implications for the theories and methodologies applied, and avenues for future research.

6.1 Discussion of findings

Throughout our analysis we considered a multitude of alternative explanations to the aspects of the causal mechanisms. We deem the presented conclusions as having the best empirical and logical fit. In the first causal chain internal to the organisation, we kept returning to the issue of ad hoc processes and a lack of a carefully designed performance measurement system. Furthermore, there was a clear path shown towards the root cause of a lack of a proper plan to carry out the strategy on an operational level. There were some avenues pointing in other directions, but these showed to be inferior to our chosen conclusions or were supplementary at best, as the empirical evidence and logical inferences were ultimately stronger for the causal chain we presented above. The same can be said for the second causal chain regarding the supply-chain where our inferences regarding responsibility issues ultimately had the stronger explanatory pull.

There is of course the possibility that we overlooked other ways of accounting for the phenomena observed in the case. We argue, however, that we have carried out the evaluation of the empirical material diligently, and in a transparent manner and are furthermore convinced that other investigators undertaking the same analysis would reach similar conclusions.

There is also the possibility that some of our empirical material is evidence of other phenomena than those we have inferred. During our analysis we have been observant of this possibility and sought to triangulate singular empirical observations with other independent sources. When we were not able to do so, we ascribed less explanatory power to the given piece of evidence. As we have tried to show through the plethora of direct quotes in the analysis, the links of the mechanism stem from observations that were to a varying degree almost always confirmed by another source, often with conflicting interests. We argue that the few observations, which stem from the accounts of a single source, are non-consequential and that we have sufficient confirmation for the most important claims in our causal model.

6.2 Limitations

First of all, our study is highly contextual, and the generalisability of its findings is thus low. As mentioned in our section on methodology we do not see this as too grave of an issue as social science has had trouble creating context-independent theory in the past (Flyvbjerg, 2006). Therefore, we deem the contextual generalisability a worthy goal in itself. One could argue that our case is so contextually sensitive, that no other company would be able to fully apply our results. That has some truth to it. Indeed, it is unlikely for another organisation, even in a very comparable setup to experience the same exact contingencies as coop.dk/shopping. However, some of the same mechanisms may be recognisable to a smaller or larger degree. We will discuss those shortly. Also, the extensive literature review into our six lenses arguably poses a way for other organisations to view their own management control systems. Finally, our analysis has shown how process tracing can be used to showcase contextual conditions and causal mechanisms controlling management control systems in organisations. This suggests that an application of our theoretical and methodological framework could enable other organisations to gain valuable insights concerning their management control systems.

A second limitation to address is how remit and scope are constrained by our interviewee selection, as the potential exclusion of important additional interviewees could harm the validity of our results. Ideally, one continues interviewing until no more surprising facts come up (Kvale & Brinkmann, 2009). However, in an enormous organisation like Coop, that can be hard to gauge properly. Therefore, we made an effort to interview employees from as many different parts of the organisation as possible, encompassing both vertical (from members of Parent Coop senior management to an employee with no managerial power) and horizontal (through the entire supply-chain and all functions internally at coop.dk save for IT and customer support) parts of the cooperation. We argue that this effort has allowed for multiple narratives to be heard and has made it easier to exclude comments that are too subjective and have no resonance in other parts of the organisation. Furthermore, in this search strategy for selecting interviewees, we wanted to make sure that the individuals were close enough to the events of the process under investigation, so that their accounts were not too far removed from the actual events. Seeing as all the interviewees were in one way or another directly involved in the work processes that we studied, we see this qualification as fulfilled.

When applying our theoretical lenses to the processes we found various connections of different theoretical origin. There is currently a debate within process tracing as to whether this is an acceptable outcome. In

extreme cases you may find strong evidence for a theory's explanatory power in one part of a mechanism, while finding strong evidence *against* it in another part. What then? The scholars involved in process tracing differ in opinion at this point. We argue, given our critical realist desire for practical and heuristic knowledge and our theoretical agnosticism, that we can craft powerful and explanatory causal chains, even if they are not perfectly theoretically consistent. This is because we find that multiple theories can be effective interpreters of how some events transpired, but given the highly contextual world, will not always be able to reproduce that. Given our desire to present the most plausible answer to our research question beyond reasonable doubt, we find that, while there are also sound arguments against the use of theories from multiple schools, we can live with some inconsistencies in theoretical explanatory power across the entire causal framework. This limitation is mostly discussed to make our thoughts on the subject transparent; our process tracing was generally characterised by a consistent possibility for theoretical application.

Also, it is crucial to touch upon the validity of our findings. As with any analysis done mainly with spoken data, we have to worry about our translation of interview statements into text observations. We have sought to mitigate this as recommended by careful transcriptions and an effort to stay true to recordings (Kvale & Brinkmann, 2009). Both transcriptions and sound recordings are available upon request and have been added as appendices for the review of this paper. We hope that by being transparent with the raw data any suspected bias from our side could at least be mitigated.

We have another disclaimer to make. As we spent quite some time at the organisation to prepare the case study and gather and analyse the data, we have developed personal relations with several case actors and interviewees. This could potentially foster biases both in our probing through interviews and interpretation of data. While there is no way to totally avoid this given our methodology and approach, we have, throughout the process, sought to stay unbiased and transparent. Whether we succeeded is of course another matter, and we will leave for others to judge.

Finally, there is the potential that interviewees themselves have been biased or may have had hidden agendas, which we have not been aware of, delivering half-truths or even faulty information, which could have distorted our analysis. As is apparent from the sound recordings, however, we argue that the interviews were characterised by good humour and lacked obvious overly strong emotions or awkward wordings which could indicate oratory subterfuge. Still, the potential for such distortion was there. Thus, when tracing mechanisms, we sought to solidify any evidence with another source as a confirmation, preferably one

that had no interest in confirming it. As a concrete example, when both the warehouse manager and the chief procurement officer stated how they found that different cost objects were distorting warehouse productivity we found it a stronger observation than if only the warehouse had stated it. Alternatively, we tried to identify patterns emerging from different empirical observations. This was for example the case with the multitude of observations regarding responsibility issues in the supply-chain. Finally, several observations of intriguing nature were discarded throughout the process tracing as they lacked sufficient chronology and cross references to be considered when tracing the final mechanism. As we wanted our interviews to create emergent knowledge and to honour both critical realist and process tracing thinking in having no favourite theory, it was impossible to set up firm rules on what to characterise as a valid observation prior to the analysis. We argue, however, that the approach described above is a worthy substitute and that our analysis is characterised by a solid degree of validity.

6.3 Implications for coop.dk/shopping

Having discussed the validity of our results we now take a look at what those results mean for coop.dk/shopping and shortly dip into potential actions the company could consider going forward.

In the analysis we saw how a middle layer of strategy was lacking, how strategy was not executed in parts of the organisation and how coordination was incomplete across the supply-chain. We argue that many of these issues could be remedied by proper partitioning of responsibility and decision rights. This might include additional decision rights for the operations manager of coop.dk, and/or more obviously, a reinstatement of a CFO to drive the flow of data, control systems and economic strategic implementation in the organisation. We saw in our empirical data that much of the important knowledge is located in finance, and as systems ideally take into account where knowledge is located in the system (Zimmerman, 2017), the CFO is an obvious starting point. Yet, local action is not enough, a manager must make strategy everyday behaviour (Ahrens & Chapman, 2005; Langfield-Smith, 1997). The middle layer of strategy still needs to be crafted, as unclear strategic conditions could become a force in itself, ousting even a powerful manager through the constraints it puts on the organisation (Skærbæk & Tryggestad, 2010). New managers dedicated to strengthening strategic and data driven initiatives across the cooperation, with the responsibility and decision rights necessary to do so, will ideally also mitigate the tendency to skimp on the implementation of new systems. Also, they should be selected so that their managerial style resonates with the organi-

sation and fills the gaps that exist due to the leadership style of other mangers (Langfield-Smith, 1997; Macintosh, 1992; Rizzo et al., 1970).

While the above can also solve some of the issues regarding responsibilities, mutual understanding and coordination in the supply-chain, we speculate that new managers are no substitute for proper dialogue and coordination. Here, the operations manager may have already proposed a solution through S&OP 2.0. It is here crucial that all parties are committed and will participate. There should be no middlemen as that would likely prolong the issues unnecessarily. Many of the theoretical contributions outlined in the literature review about measures, design, strategy and implementation should be referenced for a satisfying result in this regard.

Also, multiple scholars in the extant literature highlight the virtues of goals and measures to supplement strategic execution (Jensen, 2002; Seal & Rohde, 2015; Zimmerman, 2017). The company could consider more reward-based performance measurement systems to permeate the initiatives mentioned above. However, it is worth noting that there is some scholarly debate regarding this. Not all agree that measures are good (Deming, 2000) and some even claim that they can harm productivity by crowding out motivation (Ryan & Deci, 2000). Any implementation of more rigid and consequential measures should thus be handled with care and not heedlessly pursued. The management should consider the organisation, its culture and employees in depth before making any final decisions here. This caveat does not change the fact that something has to change as the current ad hoc culture is making expensive systems obsolete. That is foolish, but it is not theoretically eminent whether the ad hoc culture or the systems have to change.

Another organisational factor which our analysis problematises is the current structure within the supply-chain. Past separations of the procurement function have caused externalities and responsibility uncertainty to foster, this is not sustainable. What the correct new structure would be we cannot say. We can merely argue that it should no longer violate the controllability principle (Zimmerman, 2017) or the law of the single decision maker (Lazear & Gibbs, 2015). We suspect that this will in the end mean a consolidation of the procurement function. Where that new consolidated unit is placed either organisationally or geographically, however, is a managerial choice. Alternatively, if keeping the current structure is a priority; suitable coordination systems might then substitute a restructuring.

It should be stressed that the above proposed solutions are mere suggestions stemming from our understanding of the theory on MCSs and our probing into the case. This paper has been about uncovering

mechanisms and illuminating problems. We have not rigorously been seeking solutions. Thus, the above should be seen more as educated guesses or recommendations than rock solid solutions. Above all, we recommend that the organisation engages in a dialogue concerning our findings. If these suggestions serve well as a starting point for that, great! However, focus should be on the mechanisms uncovered in this paper and ultimately a deeper consideration of all organisational contingencies should be partaken before potential solutions or mitigations are implemented.

6.4 Managerial implications

While we recognise and actually embrace that the generalisability of our findings is highly contextual, we see some merit in discussing elements from our case, which might have resonance in the broader business community, and the way we apply theory to such a setting.

First of all we identified an alarming negligence of the value of a CFO. We linked this to the difficulties in making systems take root and ultimately to the low operationalisation of data and strategy. Even highly skilled finance and accounting units have trouble truly instigating change if they lack the competence, legitimacy and decision-power, which come with a membership of senior management. One of the authors has personal experience from corporate finance. Here, we would often ask clients to name their key employees, and if the CFO was not named, it was always an early indicator that alarms would start sounding soon. Indeed, much of the theory from our lenses of decision making, people and implementation named leader behaviour as crucial for strategic deployment, system implementation and organisational change in general (Brownell, 1983; Kotter, 1995; Langfield-Smith, 1997; Macintosh, 1992; Rizzo et al., 1970; Roberts, 2004). Thus for change to occur in area of finance and accounting, having a member of management dedicated to this is crucial. This stands as a warning for other companies to neglect the employment of a CFO at their own peril and opens up for future studies on the relationship between the presence of a CFO and strategic and systemic efficacy.

Furthermore, an ad hoc culture is likely an enabling factor in terms of how you deal with the many uncertainties inherent in the new markets and technology of the online world faced by new e-commerce companies. However, as such companies approach maturity; they must be wary of sustaining that culture lest it hinders them in how they implement the systems and structures necessary for survival once a certain size is reached. An unhealthy death spiral occurs, when an ad hoc culture meets a low utilisation of strategy and

MCSs. A well operationalised strategy could mediate these issues and management control systems can help enable such a strategy (Aghion & Tirole, 1997; Locke et al., 1981; Simons, 1991, 1994).

Finally, our analysis has implications for the age-old retail dilemma of the warehouse. Coop.dk/shopping is unlikely the only organisation where the volume-language of the warehouse clashes with the revenue and gross margins of sales and procurement. We have showcased several avenues to alleviate this. Firstly, responsibility must be clarified and distributed; secondly, the warehouse cannot be excluded from the coordination loop between marketing, sales and procurement. A vehicle for conversation must be put up. At coop.dk/shopping we saw how key employees acted as keepers of knowledge and data. In big organisations, that is likely the most viable option. These, however, require forums to coordinate and communicate their data and knowledge. The soon-to-be-launched S&OP 2.0 at coop.dk/shopping will hopefully ensure this, however we must stress the importance of such ways of overcoming proximity issues and integration problems in organisations and across their supply-chains. The ideal way to structure, distribute and operationalise such a system is an intriguing question for future research.

6.5 Implications for theory

Having used a plenitude of different theories of management accounting and even dabbling a bit in entirely different theoretical approaches, our analysis does little to strengthen or weaken specific theories. This was not in any way the purpose of this paper, so we will not overstress it much. Our contribution lies in how we successfully showcased how process tracing can synthesise multiple theories and elements from the literature to show causal mechanisms affecting management control systems. This shows both a certain sturdiness of the approach and opens up for similar applications in the future.

It is notable how well rational organisational theory is able to explain and account for the phenomena of this case. Even though there are a lot of contextual conditions present in the case, these theories have shown to be quite applicable and useful when trying to understand individual aspects of the causal mechanisms as seen in our analysis. We thus recommend that when one is studying organisational performance, it is prudent to start out by investigating the basic building blocks of a balanced organisational architecture and a well-designed performance evaluation system. Arguably, central theorems such as the need for directing knowledge and guiding behaviour are of significance for any organisation.

Nonetheless, the other theoretical approaches that we supplemented our analysis with, served well in painting a more complete picture. We embraced theoretical agnosticism in our work, and have found it to be very useful when trying to understand the causal mechanisms underlying the observed outcome. This is due the fact that we used alternative theories to challenge the rational school and then eventually discarded or substituted in these explanations logically and empirically. This means, that our findings, rational or not, are ultimately stronger as they have stood the test of considering alternative explanations. Arguably, a more strict application of fewer theories would have failed to deliver such a deep level of understanding as we have provided with our chosen approach.

Our chosen method of process tracing proved to be highly useful as well. However, during the writing of this paper we observed that some aspects of the terminology are overly complicated, at least for the purpose of our work. For simplicity, we have thus chosen to omit and alter some of the elements that Beach and Pedersen recommend to include. These aspects are among others the concepts of theoretical certainty and uniqueness, and empirical certainty and uniqueness. Theoretical uniqueness, for example, refers to the quality of a proposed explanation in relation to an alternative. Empirical uniqueness can be described as the quality and reliability of sources and empirics. Instead of applying Beach and Pedersen's terminology we have chosen to describe and discuss these concepts in layman's words instead.

In our view, this does not impede the quality of our findings, and we hope it makes it easier for the reader to follow our logic. Thus, we recommend others to use the method in a pragmatic way, so that it serves the research, rather than following each detail too closely. After all, it is still a fairly new method, and there are disagreements in scholarly circles on how to best carry it out in practice. Another example of this is the ambiguity about definitions of a cause, i.e. where does a causal chain start, and where does it end. Therefore, we found it only fitting to adapt the framework to our needs and would encourage others to do the same, all within reason of course.

6.6 Future studies

One obvious avenue to approach from here is to try and implement solutions to the issues unveiled through our process tracing. This could potentially strengthen our results as any solution that would prove beneficial to the organisation, which can be traced back to our analysis, would arguably be proof that we were on to something substantial. We could see multiple in vivo experiments originate from our findings, from different ways to structure decision rights to different tests as to what measurement systems to im-

plement and how. One such experiment could concern the proposed S&OP 2.0, how to craft it and how it then performs - an exercise that should be smoother given the results of our analysis.

Also, our analysis has shown the power of process tracing with regards to management control issues in organisations. Ideally, multiple other cases, both similar and not should be analysed with the same methodology and utilising our theoretical lenses. A growing body of cases such as ours would greatly enhance our knowledge of how MCSs are contingent on their contextual causal mechanisms and would unlock valuable insights in how to use such systems successfully to change behaviour, foster strategic understanding and coordination, and ultimately release value.

7 Conclusion

This paper set out to examine why the efficacy of management control systems at coop.dk/shopping is low as seen from a management perspective? Given our critical realist ontology we recognised that everything is dependent on underlying mechanisms. Theory building process tracing thus seemed an ideal method to apply as it allowed for an unravelling of the causal mechanisms linking cause to outcome.

We began with a thorough literature review of the management accounting literature to establish an array of theoretical lenses through which to view our case. The six lenses that represent the usual contingencies of management control systems were structure, decision making and control, measures and goals, design and implementation, personal relations, and alternative approaches. Having our lenses ready we then outlined our initial understanding of the case. Then, through a series of semi-structured interviews with key employees relevant to the issue we gathered qualitative data, which was coded according to the lenses to unravel the causes, which lay beneath the unsatisfactory outcomes regarding management control systems. It quickly became apparent that the causal mechanism was two-pronged in nature. One part of it concerned the supply-chain of coop.dk/shopping, another concerned the internal coordination at the e-store's headquarters. Through our process tracing we found the following mechanisms to be in place:

Internally at coop.dk/shopping there is an unclear operationalisation of the company strategy alongside a prominent lack of a CFO, and a history of multiple restructurings in the organisation. These causes enable an unhealthy loop where people 1) are not measured for their performance, 2) enact daily operations in an ad hoc manner and 3) neglect to use and sustain new management control systems. In a context riddled with proximity issues, managerial behaviour removed from performance measurement, and various Parent Coop dynamics, these actions result in a conversational follow-up on measures and initiatives, distorted effort allocation, and an abundance of different systems. The result of this is an everyday conduct bereft of planning and data-driven decision making.

In the supply-chain, an unclear operationalisation of the company strategy causes new systems to not take proper root. This, alongside the discontinuation of former coordination forums has excluded the warehouse and logistics from the coordination loop of coop.dk/shopping and fostered a context characterised by a lack of understanding and the use of different cost drivers. That means that the strategy has not been properly communicated to the warehouse. Furthermore, several restructurings in the supply-chain have

created control and responsibility issues. Overall, this imposes externalities upon the warehouse, harming productivity. This causal chain showcases an organisation where management control systems are badly utilised and where the responsibility for accounting measures and data is unclear.

Ultimately, these two causal chains result in a situation where planning and data-driven actions manifest to an unsatisfactory degree, causing management to perceive their management control systems as having low efficacy. These were illustrated through the causal framework seen in figure 17 above.

In sum, we found that the experienced low efficacy of management control systems at the organisation stemmed from the following factors:

- The lack of a CFO
- A poorly operationalised strategy
- Proximity issues regarding skills and data
- An ad hoc culture with little consequential performance measurement
- A tendency for new systems not to stick
- A closed coordination loop that largely excludes warehousing and logistics
- A lack of understanding between coop.dk and the warehouse
- Uncertainty about responsibilities in the supply-chain

The strength of our process tracing approach is that, not only have we uncovered these contingencies, we have also shown *how* they link to the outcome of low efficacy.

These findings have several implications for the management of coop.dk/shopping and also have potential ramifications for managers and employees of organisations in similar contextual situations. Firstly, the managerial capacity and importance of a CFO has been illustrated indicating that such a position needs to be filled to ensure efficient implementation and nurturing of management control systems. Secondly, as an organisation characterised by change and uncertainty matures, a great deal of attention needs to be directed towards mitigating the tendency for an ad hoc culture to permeate the ageing of the company in unhealthy ways. A sufficient managerial operationalisation of strategy coupled with well-designed management control systems is one potential way to achieve this.

Our findings also showcase the importance of paying heed to responsibility and decision rights partitioning in organisations with complex supply-chains. Besides this, such organisations likely benefit by considering their common understanding when planning and carrying out operations. Also, it is equally important to consider who the important keepers of knowledge in the organisation are, what decision rights they have, and their ability to operationalise their knowledge.

In the end, we argue that we have found the best possible explanation for the perceived low efficacy of management control systems at coop.dk/shopping. We furthermore argue that we have done so in a transparent way, and that if people were to attempt to copy our work, they would reach highly similar conclusions. Our findings are also relevant to companies in contextual situations akin to that of coop.dk/shopping. Companies with contextual conditions that differ widely may benefit from our approach by utilising the lenses and our methodological framework to analyse their own context. Finally, our findings showcase the explanatory and heuristic power of abductive process tracing. This elegant and comprehensible methodology has successfully illuminated the underlying processes causing issues at coop.dk/shopping and should be considered for future studies and efforts to analyse uncertain situations in other organisations going forward.

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