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-------VERSION FOR UNIVERSITY OF UTRECHT, CONFIDENTIAL---------

TRANSLATING THE SUSTAINABILITY VISION AND THE DIFFERENTIATION OF SUSTAINABILITY INDICATORS FOR DIFFERENT MANAGEMENT LEVELS. A CASE STUDY IN THE SERVICES SECTOR IN THE NETHERLANDS, AT ROYAL KPN N.V.

-------VERSION FOR UNIVERSITY OF UTRECHT, CONFIDENTIAL---------

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Abstract

There are multiple management tools available for corporations that want to become more sustainable. From separate management control systems for social or environmental goals to integrated or sustainability management systems. These management tools rely to a large extent on indicators. Current literature however, usually takes these indicators as a given, without providing guidelines for how these indicators should be developed. The little information available for indicator development, provides insight in how to develop one set of indicators as if the organization consists of only one management level. In reality however, multiple management levels exist that all have their own requirements of indicators. This research explored how an organization can develop a set of indicators that is differentiated to provide guidance at all management levels, whilst at the same time still contributing to the corporate vision.
Different bodies of literature where combined in order to come up with success criteria that appear to be responsible for the successful differentiation of a set of indicators. A framework was developed that was largely based on the balanced scorecard as a starting point. The success criteria were first tested on well-established conventional indicators at royal KPN N.V. This test made sure that the success criteria could be valid by first testing their fulfilment on indicator that were known to be differentiated well. Thereafter, the framework was tested on sustainability indicators to see whether the same success criteria or their absence could also be responsible for successful differentiation of sustainability indicators.
The balanced scorecard appeared to be a good starting point as a framework for success criteria for the differentiation of (sustainability) indicators. Most success criteria were confirmed to be relevant by illuminating the mechanisms that led to successful differentiation. The case study exposed some minor modifications that had to be made to the success criteria to make them meaningful for successful differentiation. The in-depth understanding of the corporation required for this study, led to a limited amount of cases being studied. Therefore, the success criteria proposed in this research are a good starting point for further research.

Key concepts

Corporate sustainability – corporate vision – sustainability management systems – integrated management systems – social – economic – environmental – triple bottom line – sustainability indicators – management levels – balanced scorecard – Hoshin Kanri – differentiation - coordination

1. INTRODUCTION

1.1 Background of the research

Triple bottom line goals

The contribution of corporations to ecological and social problems cannot be ignored. Corporations increasingly realize that their license to operate is dependent on the sustainability of their operations (Lozano, 2013). Through both internal and external drivers, businesses are increasingly moving away from a direct economic focus to a focus that also considers environmental and social impacts. This shifted focus is also called the triple bottom line (TBL) approach (Searcy, 2005) and is the purpose of corporate sustainability (Azapagic, 2003). Its importance is apparent from the wide range of drivers that drive corporate sustainability. The most important of which are: an increased pressure from customers, legislation and expectations from other stakeholders as well as a viable business case and corporate leadership (Lozano, 2013).

If a corporation moves away from a conventional financial focus to a TBL approach, its official goals will change. Merely changed goals, do not by itself change corporate reality. To change corporate reality, insight is needed in how the corporate resources can be aligned towards official goals (Jones, 2010). Literature on management control systems (MCS) provides exactly that. “Management control systems, used to be viewed as a simple cybernetic system with a single feedback loop” (Merchant & van der Stede 2007, p4). However, a broader view, is that management control includes all the devices or systems managers use to ensure that the behaviors and decisions of their employees are consistent with the organization’s objectives and strategies (Merchant & van der Stede, 2007, p4). Hence, literature on management control systems can provide managers with guidance on how to translate official goals into practice.
In pursuing sustainability, a corporation can adopt additional management control standards. There can be stand-alone standards such as ISO14001 (environmental management), ISO9001 (quality management) or OHSAS 18001 (health and safety) available to develop separate (additional) management systems (Pojasek, 2012). However, if corporate sustainability is ought to be successful, it has to be integrated in all business activities (Azapagic, 2003; Pojasek, 2012; Searcy et al., 2005). This need led to a large body of literature on how to develop and apply integrated or sustainability management systems (IMS or SMS) that are geared towards triple bottom line integration (Azapagic, 2003; Pojasek, 2012; Jamali, 2006; Maon et al., 2009; Asif et al., 2011). Hence, where MCSs provide guidance on how to continually move towards traditional official goals, IMS or SMS deal with the same subject for (TBL) objectives.

Performance indicators

Although these IMSs seem comprehensive tools, it should be noted, they strongly rely on indicators to guide their progress. The first step of developing any control system is determining the desired state and to obtain the best understanding of it, targets should be represented by measurable indicators (Merchant & van der Stede, 2007). Therefore, indicators are an important prerequisite for and component of developing a control system and a prerequisite to track progress towards official goals. The structure on which management systems are often based; a plan-do-check-act (PDCA) cycle (Pojasek, 2012; Maon et al., 2009), also demonstrates the centrality of indicators in MCSs at multiple stages. In the planning phase to establish a baseline of performance and to set goals and in the check phase to measure progress and consequently act upon the results (Azapagic, 2003). The importance of indicators in pursuing sustainability goals is also stressed by Searcy (2012). Who states that indicators are necessary “to provide a corporation with information needed to help in the short and long-term management, controlling, planning, and performance of the economic, environmental and social activities’’ (Searcy, 2012, p240).

1.2 Problem definition

Even though indicators are an important part of management systems, literature about management systems provides little guidance on how to develop these indicators. The indicator development process in tools like IMS are often taken for granted. Outside the management control systems literature, a lot has been written about sustainability indicators. This literature however, is also not focused on the development of these indicators. The GRI established a complete framework on what indicators to disclose along with national annexes and sector specific supplements (GRI, 2006). This, along with some similar initiatives however, are mainly focused on sustainability reporting. They do not provide guidance for internal decision making (Searcy, 2012). There is also descriptive research in terms of what indicators are generally disclosed in sustainability reports (Kozlowski & Searcy, 2015; Roca & Searcy, 2012). However, prescriptive research on how to develop sustainability indicators for internal guidance, is more scarce. Some work on this has been done by Searcy, who developed a six-step method using a prolonged case study (Searcy et al., 2005; Searcy et al., 2008). Another study has been done by Tahir & Darton (2010) who developed a process similar to that coined by Azapagic (2003). They both describe a funnel approach, which is started by identifying all business processes by inventory analysis and ends with the most relevant issues that are translated in indicators. However, all these approaches develop one set of indicators for the entire organization. This means that there is only one level of analysis on which indicators are chosen, goals set and consequently progress is checked and possibly adjusted. In other words, the entire organization is considered to consist of one single feedback loop management system or PDCA cycle.

In reality, most organizations consist of multiple management levels, each management level pursuing its own goals and thus indicators (Jones, 2010). “PDCA cycles apply to every level of a business process” (Witcher & Chau, 2007, p527). These different management levels also have different demands for indicators. Different management levels are concerned with different time horizons. The highest with longer-term strategic goals, whereas the lowest levels are concerned with the day-to-day operations (Jones, 2010). Therefore, indicators should be differentiated to be specific enough for every one of those, whilst still contributing to the same goals. This way, indicators can provide strategic coordination whilst simultaneously providing guidance for day-to-day practice. In developing indicators for these different demands, current literature falls short. Only Searcy et al. (2005,2008) did some work on this. They used the existing business planning process to tie the indicators to. However, they did so by expert consultation, leaving little conclusions in academic context about the process and how they reached conclusions. A more general approach on how to differentiate these indicators for different management levels, is missing. Some organizational change literature provides insight in how to translate the highest-level goals or vision of an organization, to goals throughout the organization. A good starting point for this is the balanced scorecard (BSC) by Kaplan & Norton (1996). The BSC however, specifically talks about goals, not indicators.
So in order to provide guidance when dealing with different management levels there are different requirements of indicators. Current literature on how to develop such indicators, is fragmented or not explicitly about indicators. So, there is a need to distinguish indicators between long-term strategic goals vs day-to-day operations (Searcy, 2012). However, in differentiating there is a trade-off involved. By any definition, coordination – the degree to which the same goals are pursued - will be greatest when every management level pursues exactly the same goals. This means that by differentiating indicators for increased guidance, it might decrease coordination. In other words, there is a trade-off between coordination towards the vision and differentiation for increased guidance. This research will therefore try to address the following question: how can sustainability indicators be differentiated for different management levels, while maintaining coordination towards official sustainability goals?

This research will attempt to answer this research question, by developing a general framework on how to differentiate indicators for different management levels. It attempts to combine management control and organizational change management literature with the specific literature on developing sustainability indicators to develop such a framework. This framework will then be explored by applying it on a case study.

1.3 Scientific Relevance

The study will contribute to the expanding knowledge body on sustainability indicators and specifically on that literature that aims to develop sustainability indicators to be used for internal management control (as opposed to external reporting). There is already a lot of literature on what sustainability indicators should be disclosed, this study will provide a starting point on how to develop these indicators. This research contributes to indicator development literature, by combining fragmented literature on the topic together with insights from management control systems and other management tools, such as the balanced scorecard. It will explore the value of literature on translating goals throughout the organization (starting with the balanced scorecard) as a starting point for differentiation of indicators throughout the organization. Unlike earlier efforts such as that by Azapagic (2003) or Tahir & Darton (2010), this study will show how indicators can be developed successfully for multiple management levels. It will add to a similar attempt by Searcy et al. (2005; 2008) for differentiating indicators, in that it also illuminates the factors underlying the successful differentiation for different management levels, rather than just mentioning this is done by expert consultation. It will therefore provide in-depth insight in the development of indicators for different PDCA cycles, a missing link for the real-world application of management control systems. Additionally, it might add to a poorly studied topic in literature as identified by Searcy (2012). Namely, that sustainability indicators require different time foci.

1.4 Societal Relevance

Corporations often have lofty visions that are not easily translated into workable goals (Kaplan & Norton, 1996). This is especially true for sustainability of which the definition is hard to put into workable goals (Tahir & Darton, 2010). In order to turn these visions into reality, managers can turn to management control systems for sustainability, or integrated management systems more specifically. However, in such an IMS, indicators are an important component on which literature only provides guidance to develop one set of indicators for a single PDCA cycle. Managers will then find that one set of indicators will not provide enough guidance at the practical level. Therefore, literature should provide guidance on how to differentiate one set of indicators to be able to apply it throughout the organization. This paper tempts to develop a framework that will provide such guidance. This will increase the practical applicability of indicator, management control and any other literature where indicators play a role. Corporations will then be equipped with sound management control leading to a steady progression of TBL integration.

2. THEORETICAL FRAMEWORK

2.1 Successful differentiation

In this section, theories will be explored to construct a framework for successful differentiation of (sustainability) indicators. Therefore, it is important to first define exactly what this successful differentiation is. Naturally, when tailored enough, sustainability indicators should be able to provide guidance to day-to-day practice. However, in doing so, such indicators are translated multiple times throughout the organization. Therefore, it is important that even after multiple iterations of such 'differentiation', these indicators maintain coordination towards the corporate vision. This means that the indicators actually contribute to this vision. It also means that the total set of indicators at a specific management level, covers all the aspects of the corporate vision on which it can be reasonably expected to be able to apply influence on. That is, the set of indicators is exhaustive. i.e. For a finance department it might be sufficient to focus only on financial KPI's even if the vision includes social aspects as well, but for a human resource department, it might not. This then leads to the following definition of successful differentiation in this study; *indicators are specific enough to be able to provide guidance to day-to-day practices, while simultaneously can be shown to contribute to the overall corporate vision.*

The corporate vision and the day-to-day objectives, function on entirely different management levels. Because this research regularly deals with different management levels, these terms will be defined here. *The highest management levels contain those people bearing the most responsibility over others within the organization, whereas the lowest management level consist of those people who bear no responsibility over others within the organization (Jones, 2010).*

> *"Indicators are successfully differentiated if they are specific enough to be able to provide guidance to day-to-day practices, while simultaneously can be show to contribute to the overall corporate vision".*

> *"The highest management levels contain those people bearing the most responsibility over others within the organization, whereas the lowest management level, consists of those people who bear no responsibility over others within the organization".*

As established in the introduction, current literature on developing (sustainability) indicators, does not account for different management levels. However, it is important to know what steps are already identified for the general indicator design process. These can serve as a starting point for identifying theories about how to develop successful indicators, which will then be supplemented with theories about successfully translating goals throughout the organization. Some main prescriptive indicator design literature is given by Azapagic (2003), Tahir & Darton (2010) and Searcy et al. (2005; 2008). The first two approaches are relatively similar in that they both require a set of issues to be identified by (internal and/or external) stakeholders and the indicators are assumed to translate directly from those. The only difference being that Tahir & Darton (2010) provide some more background on how to arrive at these issues. Instead of the stakeholders having to come up with the indicators themselves, they require a complete inventory analysis of all business processes, the outcome of which is then proposed to the stakeholders to further identify the relevant issues. These proposed methods can result in a set of indicators; however, these methods are completely separated from what the corporation tries to achieve. That is, they do not account for the specific goals or vision of the corporation. These methods are therefore no further explored for the successful differentiation of indicators. Searcy et al. (2005;2008) provide the most guidance by means of one particular case study. Not only did this study focus on the development of sustainability indicators, also the indicators were tied to the business process (the different management levels). The study came up with six steps to develop a successful set of indicators; conduct needs assessment, conduct process planning, develop a draft set of indicators, test and adjust the draft indicators, implement indicators and review and improve. The steps leading up to the first set of indicators however, are performed by expert consultation. Therefore, no specific lessons on how this process was performed could be identified. Another apparent choice for translating a corporate vision into day-to-day practice, is literature on management systems. Or, in dealing with non-financial (or sustainability) metrics, is to employ separate management systems for the environmental aspects (such as ISO 14000) or for social issues (such as OHSAS18001). However, as mentioned before, in most of this literature, the indicators on which these systems strongly rely, are taken for granted.

So both management control and indicator development literature, do not cover the development and differentiation of indicators. Other literature, like that concerned with how to translate a vision throughout the organization, usually considers only how given goals (with accompanying indicators) can be implemented successfully. However, it primarily deals with behavioral factors and the development of the indicators is often considered a given. A more inclusive approach deals with cascading goals through different management levels is given by the balanced scorecard (BSC).

2.2 The Balanced Scorecard

The BSC partly focuses on the development of goals for the organization and partly on their implementation. Although this literature focuses on the development of goals and not indicators, the process of developing the indicators is implied in setting the goals. Goals are merely dots on the horizon of measurable indicators and therefore, this literature contains implications for developing indicators as well. This is strengthened by the fact that - as explained later - the BSC revolves around balancing (existing) financial targets with other perspectives for which indicators might not be present yet. Because this goal setting goes hand in hand with indicators and the BSC also focuses on strategic alignment in setting these goals, the link with the research question is easily made. The usefulness of the BSC for developing indicators for strategic coordination will be explored here.

There is a large body of literature on the balanced scorecard. Kaplan and Norton (1996) introduced the concept as a reference framework, but later its use as management tool got explored. The tool was developed to align operational and management control systems, that often revolved around financial targets, with the corporation's long-term strategic objectives or vision (Kaplan & Norton, 1996). The BSC introduces three new perspectives to the traditional financial one to get a broader management focus. The customer-, the internal business process- and the learning perspective. The BSC helps to align any of the long-term strategic goals in these areas with short-term objectives, throughout the organizational chart (Kaplan & Norton, 1996). This tool can also be applied to sustainability goals, since the four perspectives of the BSC can easily be expanded to include sustainability (Figge et al., 2002). This sustainability balanced scorecard (SBSC), then includes a fifth perspective; stakeholder issues. The SBSC can therefore not only provide insight in non-financial metrics, but also in sustainability metrics specifically. This further shows the value of the BSC for this research.
The BSC introduces four management processes that contribute to linking long-term strategic goals with short-term objectives. The first is translating the vision; the vision must be translated to operational terms to provide guidelines to action at a practical level. The second process is communicating and linking; here the strategy is translated throughout all organizational levels, to departmental and individual objectives. The third process is business planning; procedures and business units for strategic planning and budgeting have to integrate to secure that the budget supports strategic goals. The last process is feedback and learning; the results of the BSC can provide input to improve on it. (Kaplan & Norton, 1996). The first two processes relate to the vision cascading down throughout the organization and are therefore relevant to the development of a set of indicators, whereas the latter two processes are more relevant for the successful implementation of these indicators, they focus on behavioral and practical matters. Therefore, in the next section, the first two processes will be elaborated upon as a general framework for developing indicators. The step of communicating and linking also provides insights for communication in a broader sense, together with linking the BSC with incentive structures. These parts are also geared towards the implementation of the indicators and since this research focuses on the development of indicators, these are outside the scope of this research. The first two steps of the BSC are then supplemented by additional theories tailored towards successfully setting up and differentiating indicators. Similar to the BSC, the additional literature often focuses on 'goals', but these are often quantifiable and therefore can be used for setting up indicators as well.

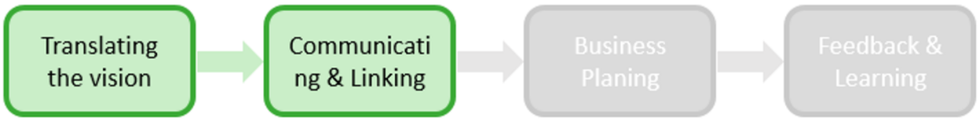

Figure 1: The four management processes involved in implementing the balanced scorecard. The focus processes are depicted in green.

2.2.1 Translating the vision

The first step is translating the vision in operational terms. Kaplan & Norton (1996) mention that lofty visions do not translate well to operational terms, leading only the financial goals to remain in sight. This might be even more so for sustainability goals. As the Brundtland's definition of sustainability is hard to turn into an operational definition (Tahir & Darton, 2010). A similar need is expressed by Chiras & Corson (1997). The BSC requires management to agree on a set of metrics that operationalizes the corporate vision, thereby forcing management to think about exactly what the vision means in operational terms. This provides operationalized goals and indicators at a strategic level. (Kaplan & Norton, 1996). This consequently provides clear input in terms of objectives to lower organizational levels. This result is also supported by Merchant & van der Stede (2007) who state that the better the understanding of the strategic goals, the better subsequent controls – and in this case indicators – can be developed. That is, under the assumption that measurable indicators are better to understand unambiguously than qualitative ambitions. The BSC (or in this case SBSC) also requires to weigh the importance of different goals. This step is originally introduced by Kaplan & Norton (1996) in the step of communicating and linking, to tie the indicators to the performance incentives. However, here it is argued that the weighing should already take place at the level of the operative goals. This is because here is accounted for different management levels. Operative goals, for the highest management levels, are also part of day-to-day practices. So in order to provide guidance to day-to-day practices at all levels, these levels could also benefit from the relative importance between goals. So assigning weights at the level of the operative goals already, can provide guidance earlier in the indicator development procedure and its hierarchy.

The arguments from this step can be translated to the following success criteria for developing sustainability indicators. One: executive management has to agree upon a set of metrics to represent the corporate vision. Two: assign weights to different metrics or groups of metrics.

2.2.2 Communicating and linking

The next process is communicating and linking. During this process the strategic goals are communicated throughout the organization and linked to individual actions. The importance of linking the indicators to the business process (all the different management levels) also arose from a case study by Searcy et al. (2004). It is argued that an effective way of communicating and linking the operational goals is not to start communicating after the goals have been established, but to already involve different management levels in establishing these goals. This means the step of translating the vision and communication and linking are not strictly consequential. If different management levels are involved during this process, there will be an increased awareness of the strategic goals throughout the organization and further translation of these goals into indicators will be facilitated (Kaplan & Norton, 1996). A similar argument is made by Witcher & Chau (2007), who state that senior management involvement in setting goals on lower management levels, will ensure alignment with strategic goals. This can be seen as a success criterion of this step.

Now, a small set of goals for each aspect of the corporate vision emerges. The first step is to communicate these operative goals throughout the organization (Kaplan & Norton, 1996). Logically, not every department can equally contribute to every goal following from the BSC. Different departments should be responsible for a different share of the goals based on their capability to make an impact in the respective area (Kaplan & Norton, 1996). This step is also supported by Merchant & van der Stede (2007). They argue that a prerequisite in developing any MCS, is to decide on what is desired and the more specific this is done, the more measures will be available to develop a control system. Therefore, the organizational goals should be translated to what is demanded from specific organizational units or individuals (Merchant & van der Stede, 2007). Searcy et al. (2004) add to this, by suggesting that lower management levels should employ an increasing number of indicators. This provides practical guidance, whilst simultaneously keeping the number of indicators at higher management levels low enough to stay focused on the corporate vision. Once the indicators are tailored to the specific business level, individuals can set their share of these previously determined department or group targets which translates in some individual performance measures. This way, the strategic goals will be linked to individual performance systems, which will clearly show how the individual contributes to the overall strategy of the corporation whilst also be differentiated enough to be of practical value. (Kaplan & Norton, 1996).

For this step, the following five success criteria are identified. The first: involvement of different management levels in translating the vision. The second: the strategic goals should be communicated throughout the organization. The third: these goals should be proportionally divided over the departments most fit to achieve them. Tying in to this follows the fourth criterion: lower management levels should employ increasingly more indicators that tie in to the day-to-day operations. Finally, the last criterion continues on the second indicator that: departmental or group goals should be translated into individual goals which make individuals understand their contribution to the corporate vision.

Another management approach geared towards the integration of strategic objectives in to day-to-day practices, is *Hoshin Kanri.* In that sense, it is similar to the BSC. Witcher & Chau (2007), however, in comparing *Hoshin Kanri* with the BSC, argue that the BSC could be supplemented by *Hoshin Kanri* in translating goals throughout the organization. They argue the strength of Hoshin Kanri is in translating the mid-term goals to the day-to-day practices, were the BSC is less specific about this. Although *Hoshin Kanri* has a broader focus on change management, several success criteria for differentiating indicators can be taken from the comparison with the BSC. The first take-away is that the partial goals that specific business units set for themselves according to the BSC, do not necessarily add up to the total strategic goals. (Witcher & Chau, 2007). Logically, this causes certain strategic goals to be under or over achieved. The second take-away is the specific way *Hoshin Kanri* increases alignment of goals. It does so by a participative approach called 'catchball'; an iterative approach of passing draft action plans to agree on a division of the operative goals to business units. (Witcher & Chau, 2007). Although this specific process might not be the only way of dividing the operative goals, a success indicator here, can be any form of horizontal organizational involvement on top of the earlier mentioned vertical one.

All the identified success criteria are summarized in table 1. The arguments are linked to the two management processes from the BSC. The success criteria are listed under identified success criterion, these are often backed by multiple sources. The context in which the sources mention the arguments are given under context. This table will serve as a basic framework for successful differentiation, which will be tested in the rest of this study.

Phase	Identified success criteron	Source	Context
Translating the Vision	1. Decide on clear metrics to reflect the vision	Kaplan & Norton, 1996, p36	To link the short term-activities to long-term actions, the balanced scorecard requires management to agree on a set of metrics to operationalize their (lofty) vision.
		Merchant & van der Stede, 1997, p7	For management control it is usefull to have strategies that are as specific and detailed as possible. This provides management alternatives and allows to target those at critical success factors.
		Chiras & Corson, 1997, p67	In discussing the purpose of sustainability indicators for communities or policy makers, the benefit is mentioned, that the indicators operationalize principles of sustainability.
	2. Assign weights to metrics or groups of metrics	Kaplan & Norton, 1996, p42	To allign incentive systems with the strategy, objectives should be weighed according to the importance to the strategy. (See text why this is included here).
Communicating & Linking	1. Involvement of different management levels in setting goals	Kaplan & Norton, 1996	In creating the scorecard, participation allows the official goals to account for input from different management levels, it also builds more commitment.
		Witcher & Chau, 2007	With Hoshin Kanri, senior management involvement in establishing goals cascading down, ensures strategic allignment.
		Parmenter, 2015	Creating successful KPI's in collaboration, rather than a top-down manner, creates KPI's that are more realistic for the whole organization.
	2. Educating the entire organization about the operative goals	Kaplan & Norton, 1996, p40	Implementing corporate strategy, starts with educating the ones who have to execute it.
	3. Divide a share of the operative goals over the appropriate departments	Kaplan & Norton, 1996, p41	An experiment with a 'personal scorecard' showed that strategic objectives could be translated to meaningful objectives at lower levels by consecutively translating them into group and individual targets.
		Witcher & Chau, 2007, p522	In achieving long-term stability, Hoshin Kanri achieves short-term control by translating corporate level strategy in to short-term components across the functional levels of the organization.
		Parmenter, 2015	To align the full organization towards a certain goal, it should be decided upon what is important and this goal should then implemented in the whole organization.
	4. Make sure the divided goals add up to the operative goals	Witcher & Chau, 2007, p521	The BSC doesn't ensure operational control as does Hoshin Kanri, because the BSC does not necessarily require that the lower level objectives add up to the higher ones.
	5. Horizontal organizational agreement on which targets and indicators should be pursued.	Witcher & Chau, 2007, p526	Alignment is increased in the organization by a process called catchball. In this process, draft objectives are exchanged to reach horizontal agreement.
		Parmenter, 2015	Creating successful KPI's in collaboration, rather than a top-down manner, creates KPI's that are more realistic for the whole organization.
	6. Increasingly add additional indicators in lower management levels if this increases practical guidance	Searcy et al., 2005	In a case study it was tried to tie up the indicators to the existing business process. The existing business process employs an increasing number of indicators at lower management levels.
		Merchant & van der Stede, 2007	For management control it is usefull to have strategies that are as specific and detailed as possible. This provides management alternatives and allows to target those at critical success factors.
	7. Translate departmental or group goals into individual goals to make individuals understand their contribution to the corporate vision	Kaplan & Norton, 1996, p41	An experiment with a 'personal scorecard' showed that strategic objectives could be translated to meaningful objectives at lower levels by consecutively translating them into group and individual targets.
		Witcher & Chau, 2007, p526	In the process of alignment, Hoshin Kanri requires vertical agreement on objectives at every level of the organization hierarch to align functional priorities with control systems

Table 1: The identified generalized success criteria for differentiating indicators, along with the context from which the success criteria were originally derived.

3. METHODS

3.1 Introducing the corporation

For this research, it is important how the total process from having a corporate vision translates to day-to-day practice. Therefore, the organization was analyzed from the highest goals or vision till the day-to-day practices. The organization which served as a case study was Royal KPN N.V. Royal KPN N.V. is a communications provider in the service sector in the Netherlands. Royal KPN N.V. is an overarching organization, serving multiple brands. In 2015, the organization consisted of over 14,000 employees (KPN, 2015). Each brand represented by its own division. This organization was chosen based on its size, complexity and access to the organization. The size allows multiple translations of official goals to be studied throughout the organization. Some level of complexity is required to make sure the academic conclusions do not just have merit for the simplest real-world case. Finally, corporate access dedicated fully for research is rare. Therefore, the fact that Royal KPN N.V. granted this access for this research, represents an opportunity to study a corporation with the aforementioned attributes. Although the corporation stated that it already employed a large set of sustainability indicators, information on the specific set of indicators and the process of how they are translated, was not readily available. Therefore, the specifics of the case study design, were investigated at the company itself.

3.2 Research Design

The framework for successful differentiation from the previous section, has not been tested in practice yet or more importantly, it has not been tested to be valid at this specific corporation. That means that the validity of these hypothesized success criteria not only is not verified yet for sustainability indicators, but even not verified yet in practice for other type of indicators. Therefore, this research is made up of two stages. First the validity and relevance of the success criteria was tested by studying already successfully differentiated KPI's. These KPI's serve as control groups to test the validity of the success criteria from literature especially at this organization. The second stage was to check whether these success criteria are also determinants of the successful differentiation of sustainability KPI's. The sustainability KPI's were checked for the fulfillment of the success criteria, which yielded conclusions as to whether the successful differentiation of sustainability KPI's can be related to the same success criteria that are (implicitly) used for other types of indicators.
So two groups of indicators were selected and then compared; the control groups and one or more sustainability group(s). These groups consist of the highest level of measurable goals in the organization (the operative goals) along with their translation to KPI's throughout the organization. The control groups should already have well-differentiated KPI's throughout the organization, because these serve to verify or debunk the hypothesized success criteria. Whereas the sustainability groups may or may not be successfully differentiated in order to find out whether the extent of successful differentiation could be associated with the verified success criteria from the control groups. All the information to select such cases and to map their cascading throughout the organization was not readily available at the corporation. Therefore, an exploratory research was performed. This exploratory research provided all the information that was still needed for a proper case selection. The exploratory research pointed out what the operative or strategic goals were and KPI's that correspond to these, which top level KPI's are perceived to be successful and if those also match the definition of being successfully differentiated. The exploratory research with a more detailed case description, will be described in chapter 4.
Once cases were selected through the exploratory research, for the control group, it was first checked whether the operative goals were indeed successfully differentiated according to the earlier mentioned definition. Thereafter, the success criteria were tested in both the control as well as the sustainability groups. The results from both groups were then compared leading to conclusions for the development of sustainability indicators. Because each group has multiple top level KPI's that are studied, there are multiple cases for the control groups as well as the sustainability groups. Hence, this is a comparative embedded case study.
The first hypothesized success criteria from the theoretical framework are at the stage of translating the vision. Therefore, it is preferred to have control groups from different corporate visions so these success criteria can be studied in multiple (isolated) cases. However, there are no multiple visions within one company at one time. So it was first explored if the different brands of KPN operate under separate visions. Exploratory interviews however [1], pointed out that the divisions operate under the same vision. Therefore, studying multiple brands did not have added value, but would greatly complicate data collection. Consequently, this case study completely focused on the most prominent brand of the corporation; KPN. Although this brand only has one corporate vision, the success criteria about translating the vision could still be tested in multiple cases by studying different aspects of this vision. As Kaplan & Norton (1996) point out, a corporation wanting to employ the balanced scorecard, can often already identify different aspects of the corporate vision, that are not strictly financial. Kaplan & Norton (1996) distinguish the financial perspective, the customer perspective, the internal business process perspective and the learning and growth perspective. In order to study different cases of a vision that is translated to goals with measurable indicators, the study therefore looked at different aspects of the corporate vision. Although KPN does not formally employ a BSC, the vision statement does include multiple of these aspects[G]. Therefore, the translation of several of these aspects to their accompanying goals and indicators can serve as multiple cases to test the hypothesized success indicators about translating the vision. This means the earlier mentioned control groups should preferably be chosen to reflect more than one of these different aspects. Since the corporation is profitable, it was expected that the

financial aspect of the vision was translated to day-to-day practice properly. Therefore, the financial aspect, provided a first control group. The other aspects that can be distinguished in the vision of KPN and for which of these aspects the corporation employs well-differentiated KPI's throughout the organization, were identified in the exploratory research. The step of the communicating and linking is about the KPI's and how they are translated throughout the organization. Therefore, for each aspect of the vision that is studied, it should be mapped how this cascades throughout the organization to operative goals and KPI's at different management levels. Because there are multiple operative goals for every aspect of the corporate vision, one operative goal was chosen for every studied aspect of the vision. The mapping of the cascading of the goals and the choice of an operative goal for each aspect of the vision, was the result of the exploratory research. Figure 2 shows the case study design in theory, the specifics of which are filled in after the exploratory research.

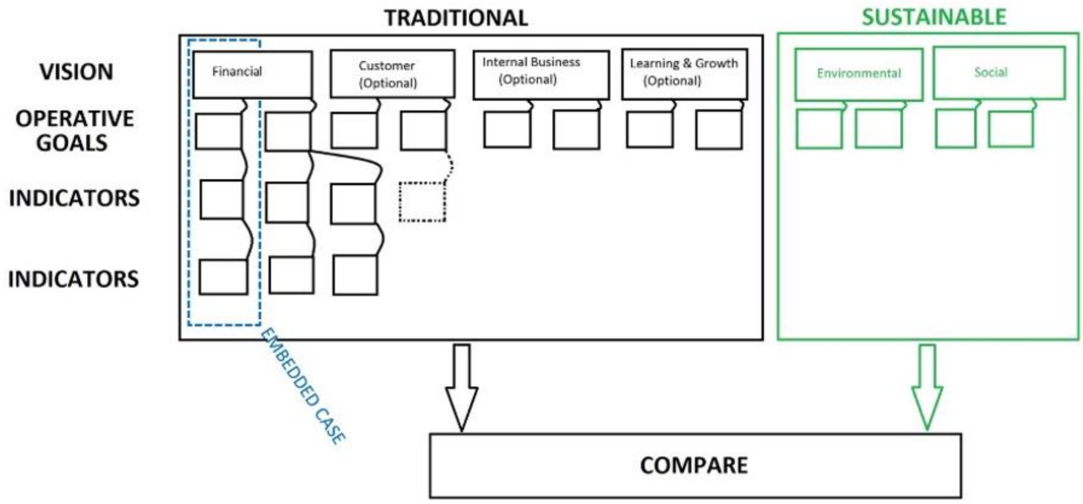

Figure 2 Research design: the structure of a qualitative, comparative embedded case study. The figure is for clarification; the actual number of cases and indicators of the corporation may be more or less complex.

3.3 Operationalization

In order to map the elements of the organization necessary in the research design, some terms had to be clearly defined. Since some of these terms are ambiguously used in literature and since real-world cases do not formally employ all the same definitions, these needed to be operationalized. Some of these terms are; corporate vision, aspects of the vision and types of indicators. The working definitions will be defined here. The operationalization of the success criteria is given in table 2.

The control groups had to be identified from different aspects of the corporate vision. Because aspects of the corporate vision are not formally identified, these aspects were identified from the corporate vision by the researcher. Therefore, it was important to clearly define what this vision entails to begin with. As Collins and Porras (1996) argue, there is a lot of ambiguity about this trendy term. Therefore, they attempted to establish a clear definition of what a vision is. They argue a vision consists of two parts; a core ideology along with an envisioned future. The core ideology consists of the core values and a core purpose, whereas the envisioned future can be broken down to a vivid description and a bold mission (Collins & Porras, 1996). Whenever a vision was brought up by an interviewee, it was checked for these parts to make sure it is consistent with the use of the term in literature. In the same article also guiding questions are proposed that can help with guiding interviewees if they are not sure what the vision is. If no vision clearly emerged, the guiding questions by Collins & Porras (1996) were used to guide interviewees in the right direction. These questions are included in the Appendix with interview questions. The vision that emerged was checked for easily identifiable aspects similar to the ones mentioned by Kaplan & Norton (1996); the financial perspective, the customer perspective, the internal business process perspective and the learning and growth perspective. In addition to these identified perspectives, interviewees were asked what the most important aspects of the vision was and how they would categorize the highest level goals at KPN.

Literature distinguishes result indicators from performance indicators and in both those indicators a distinction can be made between key and non-key indicators. In a real-world context though, no such distinctions are made. Key performance indicators, performance indicators, key result indicators and result indicators are tied closely together. What can be a result indicator at one management level, can be a performance indicator at a higher management level. Also what can be key for the performance of one person, can be less important for another. Hence, the type of indicator is partly dependent on for whom the indicator is relevant and partly on subjective judgement. Although people especially pre-occupied with indicators

clearly understand the difference between performance indicators and result indicators, most of the interviewees did not made such a distinction. Therefore, the interviewees were asked about the most important indicators. If the interviewees were hesitant about what type of indicators was meant, the question was specified to key performance indicators as the corporation employs that definition the most.
The control groups were supposed to be well-established in the organization to maximize the odds of them being successfully differentiated. Well-established indicators are therefore considered to be indicators that have at least some of the following attributes. The indicator is mentioned often, the indicator is mentioned autonomously by some interviewees, the indicator is mentioned in corporate documents, the indicator is employed for a long period of time, the indicator is perceived to be important and the indicator is perceived to be successful.
A definition of successfully differentiated is given in the theoretical framework. To test the successful differentiation, it is operationalized in the following way. Multiple questions were asked at multiple management levels, to find out whether a person perceives the KPI as giving enough guidance to day-to-day practices. This was done by checking if the KPI was autonomously mentioned, because if a KPI really guides day-to-day practices it is expected to be mentioned autonomously. If it was not autonomously mentioned, it was asked if the person is familiar with the KPI. Also, it is asked if the person perceives the KPI as giving enough guidance directly and if that person misses certain KPI's in guiding day-to-day practices. For the control groups the possibility of the operative goals being successfully differentiated was also increased by only studying those KPI's that are well-established throughout the organization.

Goals: official, strategic & operative

In order to analyze the translation from the vision to measurable goals, the highest measurable goals in the organization should be found to infer whether these have been appropriately translated from the vision. For this, a clear definition of different types of goals is required. Currently, the terminology for different types of goals can be rather ambiguous. Witcher and Chau (2007) in discussing strategic fit, simply talk about top management goals whereas Kaplan and Norton (1996) define similar goals as long-term objectives.
In order to unambiguously use these terms; here the definitions will be employed that are consistent in both a widely cited paper and a widely employed undergraduate reference work (Perrow, 1961; Jones, 2010). The highest level of goals are indicated here as official goals. These describe the vision or mission of a corporation and are not necessarily measurable. Optionally, when a corporation has a clearly defined strategy, the corporation can have strategic goals. The strategic goals are then the highest-level goals underneath the official goals. The strategic goals are what the corporation is actually trying to achieve on a long-term basis (Jones, 2010). Strategic goals can be measurable or not, depending on how the corporate strategy is defined. The first level of goals under that are the so called operative goals (Jones, 2010; Perrow 1961). The operative goals are the official goals limited by the operative policies of the corporation. In other words, those are the things that a corporation is actively and demonstrably trying to achieve regardless of what the official goals state. Operative goals are measurable and can be used to check whether a corporation is moving in the right direction. Lower level goals (e.g. operational) are not further explored.

Phase	Identified success criterion	Interviewee or corporate document indicates that:	Explanation
Translating the Vision	1. Clear metrics to reflect the vision	The metrics logically follow from the corporate vision	In practice, most corporations do not start with a formal vision, that translates to a set of top-metrics. Rather, the sequence of these steps will be the other way around. That is, the vision is retrieved from the status quo of the corporation. Hence, the only criteria that could be tested for, is whether the metrics could be logically tracked back to the vision.
	2. Assign weights to metrics or groups of metrics	The different top level KPI's have weights assigned to them, indicating their relative importance.	
Communicating & Linking	1. Involvement of different management levels in setting goals	In translating the KPI's to different management levels, there is some possibility of negotiation or providing feedback in between the management levels were the KPI is translated.	A KPI was sometimes translated throughout the organization one management level at the time. In other words, the higher management levels, were not concerned with the way the KPI was used in the lowest management levels. Therefore, a single KPI was often translated to lower management levels at multiple occasions. For each of those translations it was inquired if there was a possibility of feedback or negotiation in between management levels.
	2. Educating the entire	There is specific communication regarding this KPI or the KPI is	Every KPI is communicated in some way, e.g. yearly reports. Therefore, it is asked whether an effort is made to communicate the

	organization about the operative goals	prominently communicated in other means of communication.	specific KPI or whether the KPI is prominently communicated in other means of communication.
	3. Divide a share of the operative goals over the appropriate departments	All the departments that can reasonably influence an operative goal have some indicator to track the contribution towards that goal.	Not every department can influence an operative goal in the same manner. However, when a department can influence the operative in some way, it is important that it also employs indicators towards that goal. (For example, marketing might not receive a certain share of the sales target, but marketing still employs KPI's regarding to sales that are meaningful to the marketing department.)
	4. Make sure the divided goals add up to the operative goals	If a KPI can be broken down numerically, the KPI's at lower management levels add up to those at higher management levels.	If a certain indicator is pursued that cannot be achieved by the sum of its parts, the indicator is not considered to be translated well to its underlying parts.
	5. Horizontal organizational agreement on which targets and indicators should be pursued.	If a (top level) KPI is broken down to multiple1 groups or departments, there is a possibility of negotiation or feedback in between those groups or departments about the indicators.	
	6. Increasingly add additional indicators in lower management levels if this increases practical guidance	The number of KPI's contributing to a certain operative goal is higher at the lowest management levels than at the hightest management levels.	
	7. Translate departmental or group goals into individual goals to make individuals understand their contribution to the corporate vision	Employees are aware of what is expected of them in regard of certain KPI's and how they can individually contribute (quantitatively or qualitatively) towards the operative goal accompanying this KPI.	The most important outcome here is that an employee understands how can be contributed to a certain operative goal and thereby to the corporate vision. Therefore, it isn't considered here whether individual goals are quantitative or qualitative, as long as the indivual understand the means of contributing towards a certain operative goal.

Table 2: Overview of the operationalization of the success criteria found in literature. When the operationalization deviated from the criterion found in literature, an explanation is given in the column 'explanation'.

3.4 Data Collection

Due to the scope of this research and because KPN is the primary brand, data was primarily collected at the KPN division within Royal KPN N.V. Some corporate data however is grouped at the organization level, which means it also contains data from other brands. The data was mainly collected by desk research and semi-structured interviews. Interviewees were selected by snowball sampling. That is, the exploratory research started with the corporate supervisor providing references, which in their turn provides references from whomever they thought was most fit to provide the desired information. By using references like this, interviewees were always selected with the focus on a specific question or questions. However, whenever time permitted it, the interviews were always asked about other information in regard of the research question as well. The latter promoted triangulation and sped up data collection. For the exploratory interviews, interviewees were preferred who had the broadest understanding of the organization at a corporate level. These interviews then provided references to increasingly more specialized positions (often at a lower management level). This way, information about the business structure (operative goals and how these cascade down), information about how these are successfully differentiated and finally information on how these indicators are developed was collected. The business structure (the cascading from the vision to practical KPI's), was retrieved from all exploratory interviews, complemented with corporate documents. When necessary, subsequent interviews then provided information about which indicators were well-established in the organization. When data was not rightly available or required interpretation, it was always triangulated by holding multiple interviews and by verifying the retrieved data via corporate documents. During the exploratory research, whenever interviewees worked closely with the concerned KPI, they were also inquired about the KPI's providing guidance to their day-to-day practices. Interviews were also performed at the lowest management levels to check whether the indicators indeed provided guidance towards a certain operative goal at that level as well. Thereafter, this guidance was compared with the corporate vision as retrieved before and how this cascaded throughout the organization, to check for alignment. This already provided insight as to whether this alignment was achieved, but required some interpretation of the researcher. Therefore, the alignment was checked in as many interviews as possible by asking directly for it. Finally, information about the indicator design process was retrieved by the interviews from the exploratory research. The semi-structured nature of the interviews, will cause the least amount of bias. A rigid interview structure could influence the given information, because interviewees might feel restricted in their answers by the specific wording of the interviewer. The main interview template is included in Appendix C.

3.5 Data analysis

Data about the business structure was collected and updated in a central scheme by the researcher. Interview data was analyzed with coding software (NVIVO). Coding labels were made for all the data that needed to be collected. Firstly, labels were made for the exploratory research and successful or unsuccessful differentiation of indicators. To find whether certain information had to be labeled, a list of keywords was composed. These keywords started by using keywords from literature such as vision, guidance, specific goals, clear demands, coordination, contribution and alignment. Additional keywords were occasionally identified by completed interviews, which were then added. Another coding structure is made to check for the success criteria. Different labels will be made for all the success criteria, for each studied group of indicators. The coding lists will be included in the Appendix.

The different nodes will be continuously monitored as more information is added. As enough data was collected for a node, conclusions were drawn from it. Conclusions were only made if the data in the nodes was unambiguous or when conflicting data could be reconciled by additional information. Otherwise, the data was interpreted and displayed as being ambiguous. After drawing conclusions for each node, data on the fulfillment of the success criteria was combined for both control groups. Tables were made of the fulfillment of success criteria that clearly showed which criteria were satisfied in both cases, which in one case and which in no cases. This proved initial understanding in the correlation of the criteria with successful differentiation. This information was then combined with possible additional comments about these criteria, which could provide insight as to whether the success criteria were actually relevant or not. It was expected that most of the success criteria were satisfied in the control groups. Therefore, when one success criterion was repeatedly missing, the validity of this criterion for further analysis was questioned. It was then checked if logical reasons could be found as to why these criteria would not be relevant in the successful differentiation of the indicators. Thereafter, the sustainability aspect of the corporate vision was analyzed in the same manner. The scheme with the fulfillment of success criteria for these indicators was then contrasted with the success criteria that were found to be relevant from the control groups. This was done for multiple sustainability indicators. If a strong association could be made between these indicators being successfully differentiated or not with the relevant success criteria, conclusions were drawn as to whether sustainability indicators can be developed along the same criteria as conventional indicators.

3.6 Research quality

Reliability of the research was maximized by structuring the interviews in a way that minimizes bias. The interviews were semi-structured and questions always begun broadly and specified if additional explanation was needed. This structure steered the answers as little as possible by avoiding asking question that are too specific right away. Also, there was purposeful selection of a corporation and case selection, this case provided the required complexity and size to study multiple operative goals from different aspects. This case selection therefore maximized the odds of a meaningful outcome. Furthermore, for both the control as the sustainability group, more than one operative goal was studied to maximize variation in the fulfillment of the success criteria. Other potential issues may arise in the case that there is little or no variation in the success criteria, but there is in the success of the differentiation. The difference between the successful financial aspect and the less mature sustainability aspects is chosen to prevent such issues. Namely, the corporation indicated to encounter problems with the sustainability indicators (read successful differentiation), whereas the control groups are selected to be successfully differentiated. Internal validity of the research is maximized in various ways. Firstly, by keeping as much variables constant as possible, such as having control groups. Secondly, internal validity is improved by taking in-depth interviews to understand the causes and effects, rather than just focusing on outcomes. The external validity, as always with a single corporation case study, is limited. Especially with corporations with large physical impact there might be more complicating factors. For other corporations in the service sector however, no clues have yet been found which would limit the external validity. Reliability with qualitative research is always limited by the researcher. Therefore, a balance is ought to be struck between objectivity and necessary judgement to fit the qualitative information in an academic context.

4. EXPLORATORY RESEARCH

4.1 Case selection

This section will start off with identifying the corporate vision. This in turn, will then lead to the identification of different aspects of this vision. Those aspects that are similar to the aspects Kaplan & Norton (1996) identify in the BSC are then chosen as control groups. Only the most important operative goals relating to these aspects are chosen to be mapped as a control group, because of time restriction and unavailability of data (that is, one operative goal per identified aspect). Only these operative goals were chosen that had well-established KPI's. In the ideal situation, an operative goal would be mapped with all the KPI's throughout the organization contributing (rather directly) to the achievement of that goal. However, here too, the unavailability of data led to limiting the scope to only map those KPI's for which cascading was most readily available. That means some of the side tracks early in the cascading of the KPI, were not investigated. How a decision was made as to which KPI's to cut off, was by snowballing the interview references, towards interviewees that could further indicate the cascading of the KPI's. Those KPI's for which no further references were mentioned, were not further explored. In order to make sure the cascading of goals was mapped all the way down, this approach was supplemented with a bottom-up approach from the lowest management levels in a segment with one of the tallest organizational structure (retail).

KPN's strategy

CSR is incorporated in KPN's strategy:

Why
We make life more free, fun & easy by connecting

Who
We are green connectors

What
We connect everything & everyone in a way that is innovative, simple, reliable and sustainable

How
With the best people, the best service, the best services and the best network

Figure 3: A summary of the 'WHY document' of KPN.

The corporate vision at KPN is referred to as the 'WHY document' [1], [5], [7-8], [A]. This vision is only recently formally articulated. However, it is not constructed, but retrieved from what the company was already doing [8]. This is in line with how a vision should be found according to Collins & Porras (1996). Important to note is that this vision was not unambiguously mentioned and many interviews were needed to clearly establish this. Firstly, some corporate controllers and the CSR manager were interviewed. Finally, two strategists as well as somebody that was responsible for the so-called 'customer DNA' project were interviewed to provide a definite answer. The WHY document expresses the core purpose and mentions the goals for the future [8]. KPN also employs a set of clearly communicated core values. According to Collins & Porras (1996) a corporate vision should also include a vivid description of the future. Although the WHY statement does not clearly state this last part, it is still clearly the statement in KPN that coincides the most with a corporate vision.

The WHY document clearly consists of more elements than just a financial one. Therefore, it is indeed possible to distinguish multiple aspects of this vision to serve as control groups. The ones that were identified coincided mostly with the financial perspective, the customer perspective and the stakeholder perspective, as identified by Kaplan & Norton (1996). Although KPN's vision is open for multiple interpretations; financial rigidity is a prerequisite to achieve the vision, which is why the financial perspective was identified. The sustainability program at KPN is called CSR. CSR is briefly but centrally incorporated as 'We are the green connection' in the WHY document, which is why CSR is clearly a part of the corporate vision [1],[9]. CSR is therefore identified as the sustainability perspective (this is similar to the stakeholder perspective from Kaplan & Norton, 1996). Finally, it could be argued that the goal from the vision of being the best, has a strong customer focus. [G]

Because the vision was derived with all the goals and strategy of the corporation already in place, there was no formal document stating what goals followed directly from the vision. From the same interviews, primarily with strategists and controllers, the highest-level goals in KPN after the vision appear to be the strategic goals (see figure 5).

At KPN, these strategic goals are organized along three strategic themes that are central in the corporate strategy and its external communication; namely simplify, [redacted] and [redacted]. [6-8],[c],[E],[F]. Only the CSR goals, are not accommodated under any one of those themes, rather CSR is considered to be intertwined in all of these goals (see figure 5) [1],[C],[E]. The strategic goals are used to report to shareholders and are the highest-level goals. These goals consist of multiple lower-level goals. These lower level-goals match the definition of operative goals, because here, the abstract strategic goals are translated to actual policies and even dedicated organizational departments [10]. These operative goals are the first level goals that are measurable. Since the operative goals are measurable, these high-level goals also represent the most meaningful KPI's. For an overview of the goal structure of the organization, see figure 5.

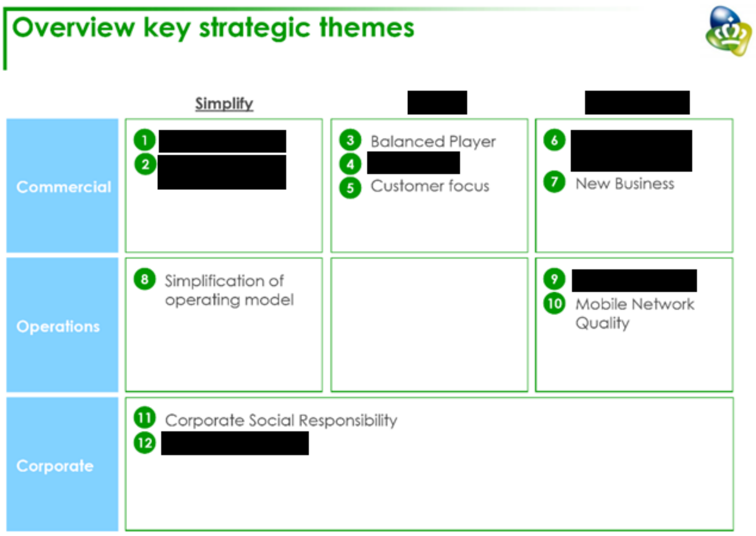

Figure 4: Overview of the key strategic themes along with the strategic goals. Taken from quarterly results Q1 2016.

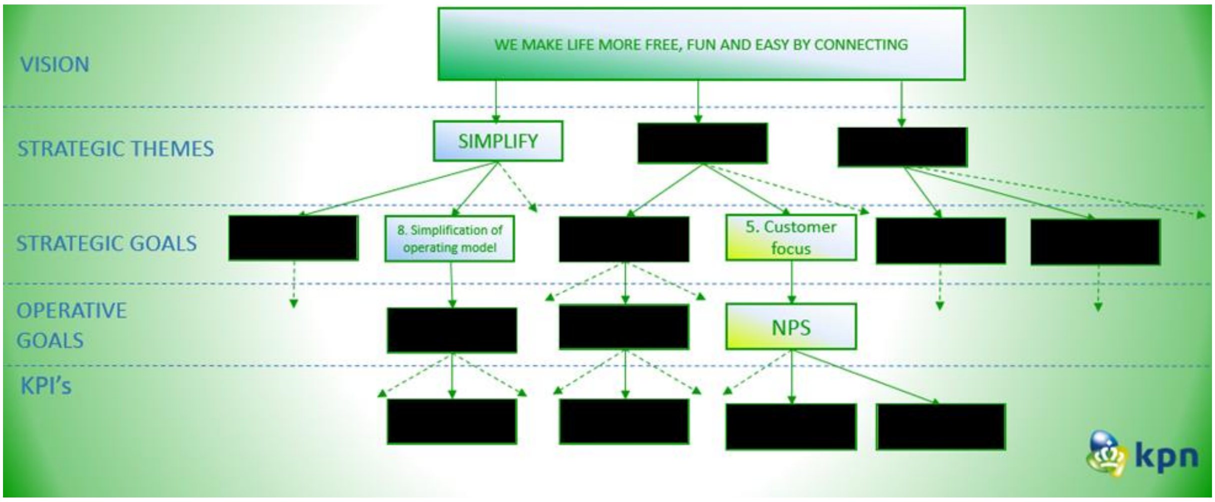

Figure 5: Overview of the cascading of goals within KPN. This overview is developed from different corporate documents and interviews. The goals provided here are an example, the overview is not exhaustive. The dotted arrows represent further cascading that is not further looked into in this study.

The strategic goals are named slightly differently in different corporate documents [A-C],[E-F]. For example, a strategic goal under '[redacted]' is called 'balanced player', which revolves around a few operative goals relating to market share whereas the integrated report, simply mentions 'grow our business' [A-B]. However, the top metrics underlying these strategic goals are roughly the same across corporate documents. Important to note here, is that the strategic goals are long-term and generally for at least three to five years [9]. However, some minor changes in the categorization or nomenclature of these goals occur on a yearly basis. An example of this is the top metric NPS. In 2015, this metric was categorized under the strategic theme 'strengthen' and consequently the strategic goal 'excellent user experience' In 2016 however, the strategic theme of strengthen was changed in '[redacted]' and the NPS was reallocated to the '[redacted]' theme and the subsequent goal of 'customer focus'. An example of these changes is given in figure 6. Concluding, there are slight differences in names and categorizations used across different departments and over different years. However, the underlying goals and measurable indicators, stay fairly consistent. From all the strategic goals (as depicted in figure 5), two goals were chosen with well-established KPI's that contributed to different aspects of the vision; the financial and the customer perspective. These goals were 'balanced player' and 'customer focus' respectively.

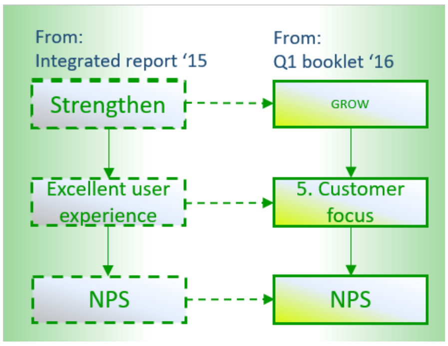

Figure 6: An example of the minor changes in categorization and nomenclature of the strategic themes and goals at KPN.

The next step was to identify some well-established KPI's for each of the identified strategic goals. The orientation for identifying these KPI's, started in the interviews that were already performed. There also, references were already collected to further explore this. Subsequent interviews were held with somebody from lean management, somebody from the customer experience center and more controllers. From this, it followed that one of the most important KPI's within a more financially focused goal, was market share from the strategic goal 'balanced player' (or 'grow our business' as this same goal was called in other documents)[A-B]. Snowballing interviewee references, quickly led to this operative goal being narrowed down to the market share for the residential services and that for mobile services. Because the availability of interviewees for mobile services was better, this part of the operative goal was further explored. The KPI that was explored is 'market share service revenue mobile'. The KPI was mentioned relatively often, employed for a long-time and also appeared as a top metric in internal documents [6],[9],[11],[13],[A-F]. A top metric equally mentioned for the financial aspect was 'spend reduction', the complexity and unavailability of central data for this metric however, led it to be discarded for this research. For a top metric outside the strict financial perspective, the 'net promotor score' (NPS) was clearly the most well-established. The NPS can be considered the customer perspective and has been around for about ten years with satisfactory results [1],[9],[11],[12],[A-F]. The translation of these two operative goals throughout the organization will subsequently be compared to the translation of the operative goals regarding sustainability.

Unlike the well-established financial and customer indicators, the sustainability indicators are considered to be problematic so far [1]. All CSR goals are formally categorized as a single strategic goal (see figure 5). Several goals underlying this strategic CSR goal, are observed to be more close to core business than coinciding with the triple bottom line goals that define corporate sustainability. For the operative goals, no multiple formal sources were found that displayed the same ones. Some of the KPI's that were repeatedly reported are energy consumption, the new way of working (NWoW) and a number of achievements by 'KPN mooiste contact fonds' which is a charity initiative [1],[A-B],[F]. The energy consumption is monitored to reach the operative goal of climate neutral energy supply [1],[A]. The new way of working is a KPI that promotes employees to work remotely if this saves emissions from commuting (environmental benefits) or if it avoids traffic jams (societal benefits). These three operative goals, are considered to be actual CSR KPI's in that they actually contribute to triple bottom line goals [1]. That is, these goals have a strong environmental or social focus. 'KPN mooiste contact fonds' is a charity that uses telecommunications to let children that are unable to attend school, attend school remotely. Because the 'KPN mooiste contact fonds' is a charity and is largely decoupled from the operations of the organization, only the former KPI's will be explored for this research.

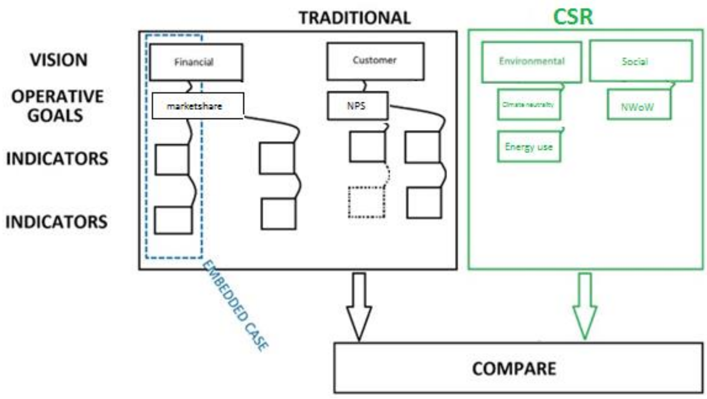

Figure 7: The schematic case study, this time filled in with the actual case selection. The main operative goals are now illustrated with their relation to the vision. Further cascading will be explored in detail in chapter 5

5. RESULTS

In this section, the cascading of the studied KPI's throughout the organization will be mapped. It will also be checked if the well-established KPI's are indeed perceived as differentiated successfully. Following the operationalization, the latter means that the KPI's provide guidance at the day-to-day practice whilst simultaneously contributing to the vision. Thereafter, it will be explored what success criteria were fulfilled and if they were relevant for both control groups as well as for the CSR group.

5.1 Control groups

5.1.1 Mapping and success - Grow our business

The control group 'grow our business' focused on market share service revenue mobile (see chapter 4). It is one of the most well-established (and therefore well-differentiated) set of KPI's of the corporation. One interviewee stated: "I think everybody realizes the importance of market share, it is an enabler for everything else that KPN is trying to achieve" [17]. This argument was also given multiple times to confirm the fact that the KPI contributes to the corporate vision [6],[10],[17], satisfying one part of the definition of successful differentiation.
In mapping the cascading of this KPI, some business controllers could directly indicate how this KPI could be further divided on a corporate level. First into the net adds for postpaid (the net amount of added subscribers) and the average return per user (ARPU) [9],[11],[13]. The net adds then being further divided in the gross adds and churn (the amount of customers leaving) [9],[10],[11]. The controllers, having a corporate-wide focus, could not further indicate how these KPI's are then translated further throughout the organization. Corporate documents, focusing on result indicators, also did not reveal such an overview. This is a noteworthy result, since the KPI is so clearly linked to the core business of the corporation. One interviewee stated about market share: "What you see here are three of the top-metrics from the management letter that goes to the executive board every month, market share is one of them" [9]. Therefore, although the KPI may be differentiated well to many KPI's providing day-to-day guidance, this cascading is not widely known. Because the controllers only worked with these market share KPI's for reporting purposes, the KPI is basically irrelevant for their day-to-day practices. Therefore, the controllers were not inquired about providing guidance to their day-to-day practices.
Further cascading of the market share KPI followed from interviews within the sales department. Market share is the main KPI that the interviewee worked with at this level and it was therefore checked for providing guidance at this level. The market share was considered to provide enough guidance [15]. Although the KPI's were not considered to be optimal for steering behavior in lower management levels, the interviewee could not think of ways to improve on this. "Ideally KPI's should be developed bottom-up, so it would be sure to guide day-to-day practice. These bottom-up KPI's should then be aggregated at the corporate level. The challenge then, is to make sure you always end up with correct numbers that add up for shareholders." [15] These interviews also confirmed the cascading tree up until that point. Furthermore, within the sales department, it became clear that the gross adds would be translated to net sales [15]. The net sales is a KPI that follows from the gross adds, but includes a correction to account for expected cancellations [15]. It was then indicated, that KPI's were subsequently divided amongst the different sales channels of KPN [15]. Sales channels are the main ways of making sales at KPN that have their own management, examples being online, call centers or stores. At the level of the channels, the type of KPI's underlying the sales are not the same for every channel. However, most channels distinguish both the gross sales as well as the amount of cancellations [15]. The interviewee at this point, implied that these KPI's were then given to all the different sales units; that is the regions, the stores and the individual sales agents. The interviewee could not formally verify this however. Therefore, this hypothesized cascading tree was then checked with another interviewee from one specific channel of the sales department, a controller from retail. This interviewee's daily tasks revolved around these KPI's as well. Therefore, the guidance to day-to-day practices was also tested at this level. The controller stated the KPI was a sufficient KPI to guide day-to-day practices. The controller stated that the KPI's were even guiding day-to-day practices to such an extent that it went at the expense of decision making freedom for managers. "The danger would rather be that KPI's are considered to represent the absolute truth. This is dangerous for the flexibility of the corporation". The interviewee did however point out the need for indicators with shorter lag periods between the moment that the performance actually takes place and the reporting of this data in an aggregated indicator. This way, day-to-day behavior could be influenced with a more direct feedback. This was more of an operational issue though, rather than a flawed indicator. In this interview the cascading so far was verified. The tree was almost correct except that the regions in practice do not get the KPI's and further divide those to the stores, but rather the KPI' are directly divided from the channel level to the store level, with the separate store KPI's then adding up to the regional KPI's again. In other words, the regions simply contain aggregated data of separate stores. It was also mentioned that the sales were divided amongst different types of subscriptions: retention sim-only, retention hand-set, acquisition sim-only and acquisition hand-set [16]. The tree was still mapped correctly, except that the tree from the net

sales downward, existed for every single one of these subscriptions types [16]. The layer of subscription types was then added. This new tree was presented to a business controller who confirmed the final structure [17].

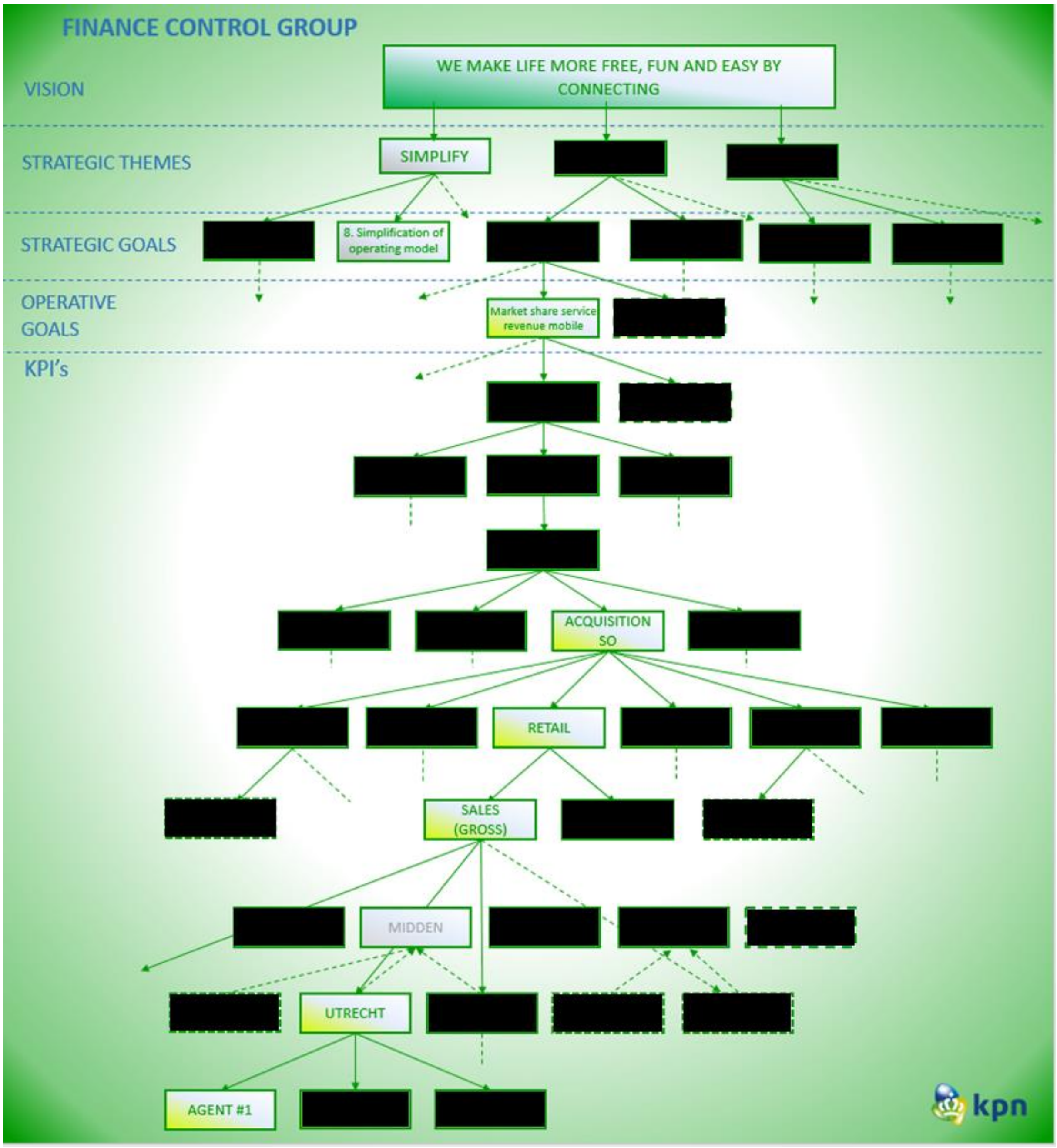

Figure 8: Cascading KPI's from strategic goal of 'grow our business'. Some KPI's for the [redacted] *and* [redacted] *teams are supplied for context. This tree was derived from interviews: 5,9-11,13,15-17 and documents: A-F, I.*

So now the cascading was mapped all the way down to the level of the day-to-day sales. Interviewees at this lowest management level were then asked to what extent the KPI's guided their day-to-day work [18-19]. At this level, both interviewees autonomously mentioned market share when asked about KPI's guiding their day-to-day work [18-19]. The way the KPI market share was broken down at this level was perceived to provide enough guidance to day-to-day practice. An overview of the perceived guidance is given by table 3.

Market Share	15	16	17	18	19
	Interviewee #				
Familiar with KPI	√	√	√	√	√
Mentions KPI autonomously	*n/a*	*n/a*	*n/a*	√	√
Provides enough guidance	√	√	√	√	√
KPI is optimal	×	×	√	√	√

Table 3: Interviewee response to questions about indicators of guidance. The cell "KPI is optimal", corresponds to the question if there was any lack of guidance perceived (positively formulated for better overview). N/A was indicated for "Mentions KPI autonomously" when the KPI was the topic of the concerned interview.

In conclusion, this operative goal of market share service revenue mobile, seems well-differentiated. There is an elaborate cascading to throughout the organization, the KPI has been in use for a long time, is considered to be important and guides day-to-day practices for those relevant. However, most of the cascading is not known organization-wide, but only for those rather directly involved. That a KPI may be this well-differentiated, yet not clearly known throughout the organization, could be due to the fact that the KPI developed organically over such a long period of time. As one interviewee stated: "All these KPI's were developed over a long period of time. These were never checked twice, because they worked, that is what we are doing now with the next-gen finance project" [10].

5.1.2 Mapping & success - Customer Focus

For this control group, the cascading of the KPI's was not readily available either. There were recent efforts within the corporation to map all the KPI's that contributed to the NPS at every stage of customer experiences. In this so-called customer journey project, the KPI at corporate level was linked to the KPI's at day-to-day practices. In this process, every part of customer experience (which results in the NPS) was linked to one or more already existing KPI's. Therefore, it seems that guidance is provided to all the day-to-day activities that can contribute to this NPS. However, since the efforts to link this are only recently started in the corporation, it means this control group too had an implicitly rather than an explicitly differentiated structure before it was explicitly mapped [12], [H]. This is similar to the other well-established control group. Because of this clear mapping of indicators however, most information regarding this KPI could be collected in collaboration with a single person from this 'customer journey team'. Based on the operationalization, this is a positive sign of being well differentiated. This because this interviewee is to a large extent familiar with the KPI. Important to note however, is that this interviewee might be particularly familiar with the KPI's because of the customer journey project, this familiarity is not necessarily shared by other employees.

Initially, it was clear how the top metric NPS could be divided amongst the same lines as the business structure [12]. The internal corporate website prominently displays the average NPS, alternated with the NPS from the business market, consumer market and small and medium enterprises (SME's) [12],[J]. This is also how the organization itself is structured. Focusing on the consumer market, the NPS consumer market could then be divided amongst consumer residential and consumer mobile [12]. Either one of those can then be divided amongst delivery events and service events. The former being measured at the installation of new products, while the latter can be measured at all subsequent interactions [12]. These events can consist of multiple interactions, at which so called contact measurements are performed [12]. This cascading was rightly available and therefore seems to be properly differentiated. It is important to note however, that these are mainly result indicators as opposed to performance indicators. This because there is no level at which the NPS can be directly influenced through day-to-day practices. Therefore, to properly guide action, the customer journey project linked these result indicators to proper KPI's (called drivers) [12].

For further cascading of the KPI's including the complete set of drivers, the data of the customer journey project was not complete yet. Therefore, this data was collected during this research for one type of contact measurement; a sale in a store. Provisional data from the customer journey project was used which was then combined with data collected at a local store [18],[19],[H]. From this, a provisional cascading to the lowest level was constructed. The provisional cascading was then discussed and refined in an iterative approach with the customer journey department [12]. This resulted in the sales NPS as contact measurement, which are then be broken down to five different drivers; acceptable waiting time, greeting upon entering the store, employee friendliness, employee knowledge and how responsible the employee handled the wishes of the customer [18-19]. These drivers are all measured to provide guidance for improving business processes at the corporate level. The drivers also provide some guidance for the sales representatives, but the drivers are not measured at individual level. One employee stated that the NPS already provided guidance to his day-to-day practice as a result indicator, especially with the underlying drivers. However, the guidance could be improved by specifying the NPS to the level of the individual instead of the store as whole. "The NPS definitely provides guidance, but to be personally accountable I would have liked to see it being traced back to the individual" [18]. It was clear however, which KPI's at the personal level impacted the drivers of the NPS. These KPI's were also mapped below (see figure 6).

The following guiding KPI's at a day-today level contribute to the NPS drivers: sales per employee, the e-learnings completed by every employee and the occupancy rate of the store [12],[18-19]. An overview of the perceived guidance of the NPS at the customer journey department as well as from two employees at a store, is given in table 4.

	Interviewee #		
NPS	12	18	19
Familiar with KPI	√	√	√
Mentions KPI autonomously	n/a	√	√
Provides enough guidance	√	√	√
KPI is optimal	√	×	√

Table 4: Interviewee response to questions about indicators of guidance. The cell "KPI is optimal", corresponds to the question if there was any lack of guidance perceived. N/A was indicated for "Mentions KPI autonomously" when the KPI was the topic of the concerned interview.

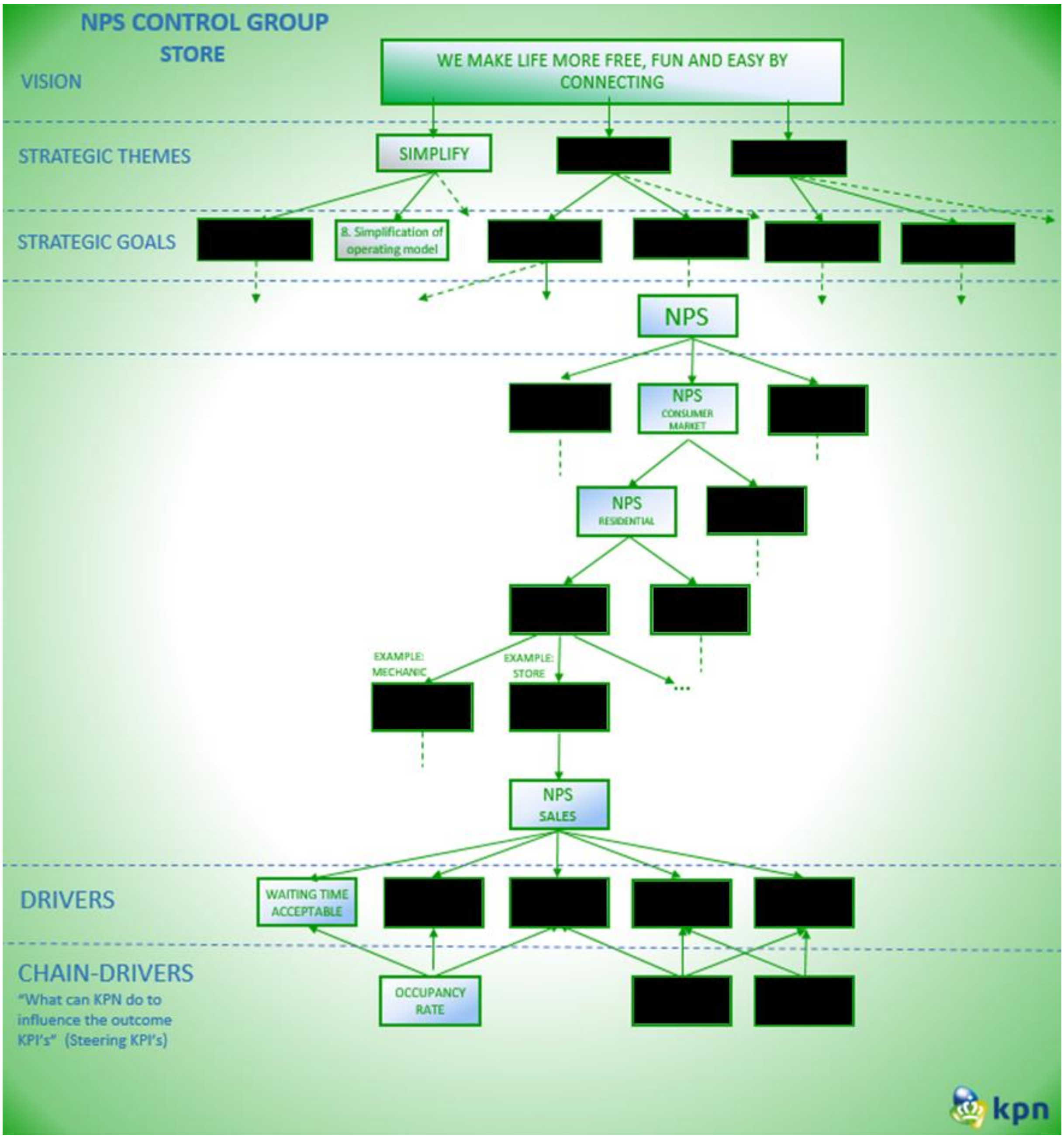

Figure 9: Cascading KPI's from strategic goal of 'Customer Focus'', from NPS downwards. This tree was derived from interviews: 5,12 and documents: A-F, H.

5.1.3 Fulfillment of the success criteria – Control groups

Clear metrics to reflect the vision

The metrics or operative goals were independently constructed from the corporate vision [9]. That means the top metrics did not follow from an agreement of how to reflect (operationalize) the vision. Rather, the process in KPN was the other way around. As explained earlier, the corporate vision was agreed upon from what the corporation was currently doing. The highest purpose of the organization at the time the vision was retrieved, was the corporate strategy. This means the vision followed from the strategy and its underlying operative goals, not the other way around [6],[8]. Interviewees also confirmed that the KPI's market share and NPS were perceived to reflect the corporate vision [11],[17]. Namely, one interviewee said; "Our vision is to make life more free, fun and easy. Market share is an enabler to reach that goal" [17]. Another mentioned that if a vision is something core to the company, then NPS is part of the vision: "Customer satisfaction is definitely core to the business, it's not a strategy" [8]. For these reasons, although there was no conscious decision on the KPI's to reflect the vision, the success criterion of the KPI's reflecting the corporate vision is considered to be fulfilled.

Assign weights to operative goals

For both control groups, no weights are assigned to value their relative importance [14-16]. One interviewee about both control KPI's: "Of course different goals should be valued differently, but this is up to the discretion of the managers. You cannot express everything in numbers, in my opinion, the managers should even get more responsibility instead of always having to reach some number" [16]. At the level of the stores however, some weight is given to the accomplishment of different goals. The stores are guided by an important metric ('the scorecard') which summarizes overall performance of an employee. This scorecard, on a 100-point scale, is made up for 70 points of a combination of sales indicators and for 30 points of customer satisfaction (NPS). This does not mean however, that customer satisfaction accounts for only 30% of the employee's performance. Namely, the NPS can also be negative and detract from the 70 points of the sales, which is why customer satisfaction cannot be exchanged for higher sales. [18],[19] A similar argument is given at higher management levels where the KPI market share should not be achieved at the expense of the NPS. "There is no weight given to the market share versus the NPS, however, it is generally understood that the sales cannot go at the expense of NPS, both should be on point" [15].

Involvement of different management levels

For both KPI's there is multiple forms of vertical agreement within KPN. For the most important KPI's in the management letter, the different departments first have to agree with the corporate controllers. The controllers then, discuss these KPI's with the executive board [9-10],[17]. The departments in their turn however, also have their own management letters. At this level, there is also some form of vertical agreement before the provisional KPI's are being constructed. [9-10]. Although not all these management levels negotiate about the indicators simultaneously, still every management level negotiates with at least one other management level about the indicators. So at these management levels, the success criterion of involvement of different management layers is considered to be fulfilled. When the KPI market share is cascading down further, there is also some form of vertical agreement. Although this is mainly about the height of the targets as opposed to the definition of the targets itself. Whereas this research is concerned with developing the indicators themselves. Also, for deviations of this targets, the channels have to come up with good reasons or work out a solution by horizontal collaboration (see horizontal agreement). [15-16]. Concluding, there is an involvement of different management levels, but this involvement is limited to the upper few management levels.

Educating the entire organization about the operative goal

There are different means of communication of the top metrics. Both control KPI's are displayed on multiple corporate documents as well as the intranet (the internal website of the corporation) [A-F],[H-J]. The NPS is prominently displayed on the corporate website and part of the incentive structure of all employees of KPN [1],[12],[J]. The market share and NPS are both prominently displayed (separately displayed amongst 6 KPI's) in the management letters that inform the executive board every month. Additionally, the employees at the stores have both market share indicators as well as the NPS in their main guiding indicator; the scorecard. With all of these efforts, special attention is given to the communication of these indicators specifically and therefore seem to resemble an effort of educating the entire organization about the operative goals. However, the knowledge about the cascading of these indicators is not homogenous throughout the organization. Most interviewees at corporate level only knew how the top metrics relate to some other KPI's at the corporate level, whereas the lowest management levels only knew how to relate the KPI's to some of the generic goals of KPN [4], [9-11],[13],[18-19]. Only the sales department, which is a department that crosses all levels of the organization, provided details on how the cascading looked throughout the organization [15-17]. In other words, although there was not a single interviewee that could paint the full cascading of the KPI market share in the organization, all interviewees, could at least indicate how the KPI was translated to at least one level lower in the organization, than what their tasks were actually concerned with. The latter fact implies that educating the organization about the KPI was beyond a bare minimum. There is specific attention given to their communication and thus this success criterion is satisfied for this KPI. For the NPS, one interviewee could provide most information for the whole organization, which might indicate an even better knowledge level about this KPI. In combination with the special attention given to its communication, this criterion is also considered to be fulfilled for the NPS.

Divide the operative goals over the appropriate departments

For the market share, this success criterion is relatively straightforward. The operative goal is divided in smaller parts to all the departments that do sales. Within these departments the KPI's are even further divided amongst different groups (stores, call centers) and individuals [12],[15-17]. The KPI is even discussed in collaboration with marketing, because marketing and sales are both responsible for contributing to this KPI [17].
The NPS is partly a goal of every employee of KPN, because it is tied into the incentive structure of the corporation [1},[8]. The NPS is not literally divided amongst all the departments though, because the KPI is based on an average of all the underlying measurements not on the sum, hence all departments have the same targets. Only the target outcome of the NPS is separately determined for the business and consumer segments [12]. Concluding, although not divided amongst all segments and departments, the segments have their own targets and this is shared throughout this segments for all departments that can contribute towards it [12}. The KPI is divided in the sense that every department has different underlying drivers for the KPI, which clearly indicates the different contributions that different departments can make [12],[I]. The incorporation of the KPI in the personal incentive structure of every employee, ensures that even employees whose day-to-day task does not immediately concern with NPS, still has an incentive to contribute to the KPI [1]. Therefore, and for reasons discussed before, both the market share as well as the NPS are considered to be well divided amongst the appropriate departments.

Goals add up to the operative goals

The market share KPI's all add up to the goal that is set for market share at the corporate level. This is true all the way up to the personal targets for sales in stores or call centers [15-16]. In a way, the system is even more sophisticated than just adding up the different indicators. Namely, in day-to-day sales there is always a certain amount of cancellations of placed orders. On the higher level of the market share, there is always a certain amount of churn (customers leaving). For these two factors, is accounted when distributing the sales KPI's across the organization. Namely, the gross sales has slightly higher targets because a certain number of cancellations is accounted for in its development. Secondly, the gross adds is a KPI that already accounts for the amount of churn. Because these KPI's actually apply corrections for these factors, they make sure the achieved sales add up to the top metrics rather than failing to meet them [15-16]. As previously mentioned, the NPS does not add up, but is averaged over the whole organization [12]. For these reasons, this success criterion is considered to be met.

Horizontal agreement

Usually KPI's are horizontally as well as vertically agreed upon at KPN. At all the aforementioned meetings for vertical agreement, there are usually multiple parties present from the same organizational level, but from different functions and different departments. Because these people from different departments are all present at the same meetings, these meetings also reach horizontal agreement [9],[11],[15-17]. Also, when different departments work closely together on a target, there is close communication between those departments. "The KPI's are continuously discussed with marketing, but also with other departments. Basically, everyone agrees with each other about all the KPI's" [17]. At the corporate level, the NPS follows the same structure, but all departments that have direct contact with customers, have their own NPS indicator. These scores cannot be compensated in between departments, which makes horizontal agreement irrelevant [9],[11-12].

Increasing number of indicators at lower management levels

Both control groups clearly show an increasing number of indicators at lower management levels. Both control groups are first broken down along the organizational structure, which results in multiple KPI's for different segments or departments [12],[15-17]. For the NPS this starts with the KPI being broken down into NPS consumer, corporate and SME's and then cascade further in these segments. In line with success criterion 2.3, the market share is only broken down for those segments that can actually contribute to this KPI. Within these relevant segments, increasingly more indicators are present for the market share. When the market share cascades down through the channels, even more KPI's are present [15-17]. In every channel for example, the KPI's are broken down from gross market share indicators into net indicators (after cancellations and churn). The sales KPI's are then broken down even further to group and individual goals [15-17]. When the NPS cascades down through the channels, different channels have different KPI's for drivers that are channel specific [12]. At lower management levels, the NPS at store level also shows multiple drivers for this one score [12].

Individual goals

Following from the last criteria it shows that both market share as well as NPS is linked to clear KPI's with individual goals. Market share is, in the form of a scorecard, also visible at individual level. The NPS does have a target, however, the smallest level of analysis for this target is the store, not the individual. The drivers still clearly indicate what the individual should focus on and also as mentioned before, the NPS is linked to all the individual incentive structures [12]. So even though there might nog be clear individual targets at every level, employees clearly know what is expected of them regarding this KPI and to what operative goals this contributes. Therefore, the success criterion seems to be met.

Success Criteria	*Market Share*	*NPS*
Clear metrics to reflect the vision	√	√
Weights assigned	×	×
Different management levels involved	√	√
Educating the corporation about KPI	√	√
Divided amongst appropriate departments	√	√
Goals add up	√	N/A
Horizontal agreement	√	√
Increasing number of indicators	√	√
Clear individual expectations	√	√

Table 5: Overview of the fulfilment of success criteria in the control KPI's.

5.2 Sustainability group

5.2.1 Mapping and success – CSR

The energy consumption is centrally measured and does not formally cascade further in more KPI's. However, decentralized consumption is easily measured and the data is available. Hence it argued that energy usage can be retrieved at different levels [1]. This means that the cascading seems to be present, although it is not explicit. This does not necessarily pose a problem as can be seen with the market share. The NWoW is currently divided in two other KPI's, namely the percentage of employees within KPN that use any form of the new way of working (on a yes or no basis) and the amount of services KPN sold to business clients, who are thereby facilitated to use the new way of working themselves [1].

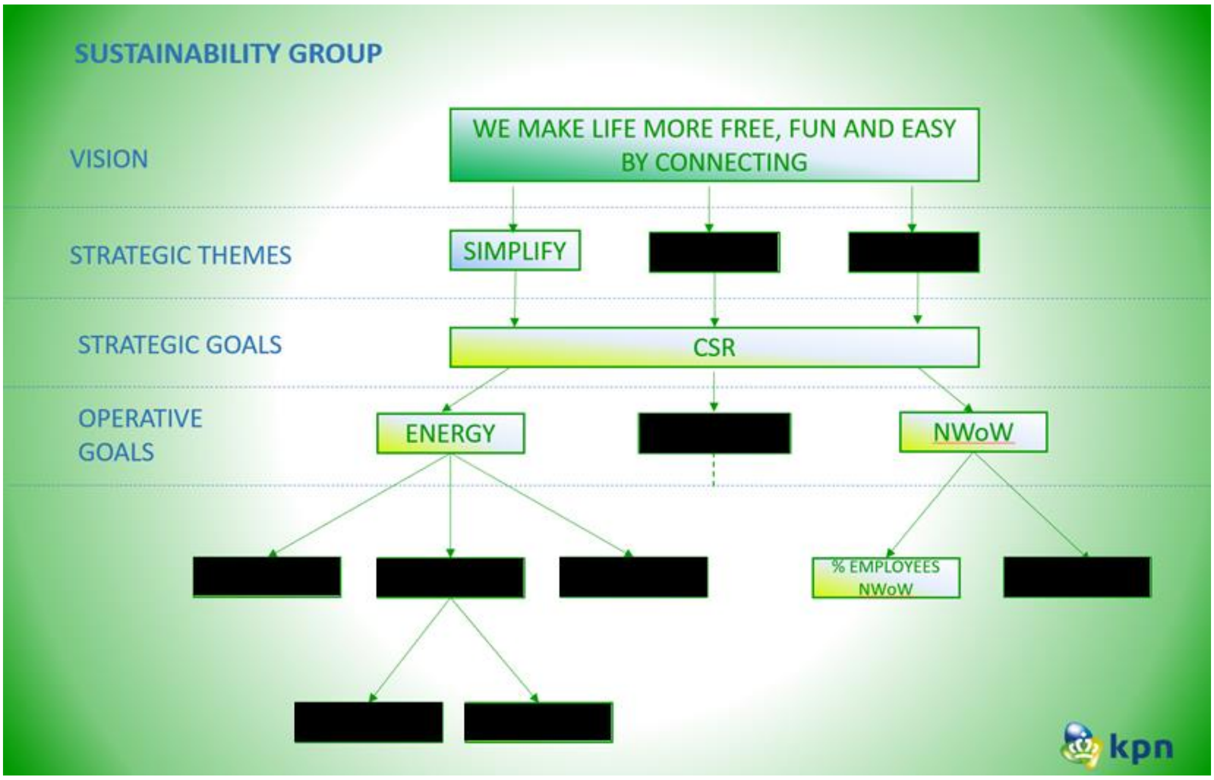

Figure 10: Cascading KPI's from strategic goal of 'CSR'. From both energy consumption and the New Way of Working (NWoW) downwards.

To check these KPI for guidance, an interview was held with the CSR manager who indicated that the energy KPI seems to provide enough guidance at a corporate level, whereas the new way of working does not [1]. Namely, the energy consumption is mainly reduced due to top-down initiatives and no problems were perceived in doing so. The NWoW however, was mentioned not to provide enough guidance, because the KPI was already stuck at the same value for an extended period. *"It seems that for the way the KPI is currently defined, an optimum has been reached. So if we want to achieve more, we should start to measure different things"* [1]. Since these KPI's are not relevant for store employees, employees at the KPN headquarters were inquired about its perceived guidance. These employees, did not mention the energy KPI's autonomously. The employees indicated that they did not perceive to have influence on the energy consumption, in which case guidance to their day-to-day practices would be irrelevant. Strictly spoken of course, employees can influence energy consumption in terms of lighting/heating and cooling. Whether this is a noteworthy contribution and whether this is something that the corporation wants to promote or not, was not clear (and for this research there was no opportunity to inquire executive management about this). Employees do however have influence on the NWoW KPI. Although familiar with the KPI, no interviewee mentioned this KPI autonomously either. The KPI was not perceived to provide enough guidance and it was also not perceived to be optimal [20-21]. Not optimal was the way the KPI functioned on an all or nothing basis [1]. *"Of course we sometimes work remotely when it's convenient, but I don't anybody considers this KPI when doing so"* [21].Concluding, the CSR KPI's about energy and the NWoW do seem to contribute to the corporate vision, but do not seem to provide guidance to day-to-day practice.

	Interviewee #		
Energy	*1*	*20*	*21*
Familiar with KPI	√	√	√
Mentions KPI autonomously	*n/a*	×	×
Provides enough guidance	√	*n/a*	*n/a*
KPI is optimal	●	*n/a*	*n/a*

NWoW	*1*	*20*	*21*
Familiar with KPI	√	√	√
Mentions KPI autonomously	*n/a*	×	×
Provides enough guidance	×	×	×
KPI is optimal	×	×	×

Table 6: Interviewee response to questions about indicators of guidance. The cell "KPI is optimal", corresponds to the question if there was any lack of guidance perceived. N/A was indicated for "Mentions KPI autonomously" when the KPI was the topic of the concerned interview.

5.2.2 Sustainability group – Success criteria

Clear metrics reflect the vision

By the same argument as the coordination towards the corporate vision, the sustainability KPI's are considered to reflect the corporate vision [1],[G]. That is, the vision was constructed around what the corporation was already doing, which also included sustainability goals at a high level. Sustainability is clearly mentioned in the vision in the form of 'we are the green connection'. However, it should also be noted that even at the level of the strategic themes (what the corporation is already doing), sustainability (or CSR) could not be assigned to either one of those themes. Therefore, in most official documents, the CSR targets are represented as completely separate operative goals [A-C], [E-F]. Hence, the fulfillment of this success criterion remains ambiguous. *"CSR might be a central part of the WHY document, but whether it's truly part of the vision or just wishful thinking, I don't know"* [6].

Assign weights to operative goals

With these KPI's again, no weights were assigned to their importance [1]. In the top-down matter that the CSR goals are now pursued, no direct trade-offs are present such as with the market share and NPS. Pursuing CSR goals does however take away time and resources from other goals. Since there is no weight to the importance of the achievement of these targets, this time and money might not be made available consistently. This might lead to the CSR goals always being of secondary importance or conditional upon the achievement of more traditional (financial) goals. Which is why this success criterion is not considered to be fulfilled.

Involvement of different management levels

For these sustainability KPI's control groups are composed (*in dutch: 'stuurgroepen'*) that operate corporate wide. These groups contain employees from different management layers and negotiate about the height of the targets. [1]. This means that in creating both studied CSR KPI's, multiple management levels were involved. These KPI's, just like the control groups, are composed based on proposed indicators that are sent to higher management for approval [9]. So it is apparent that the involvement of different management levels is satisfied at multiple occasions.

Educating the entire organization about the operative goal

The way both CSR KPI's were communicated differed as well. Both KPI's were communicated in the yearly reports and investors presentations [A],[C]. However, the energy target for years had a more prominent spot in the yearly report [1],[A]. This was concluded because the energy target had a small but dedicated section in the report, whereas the NWoW target was only represented as one entry in a table. Also, the energy KPI was very successful, because the KPI showed a clear continuous decline in energy use. This lead the KPI to be represented more in formal communication [1]. It should be noted however, that this communication is primarily geared towards external communication. Although this fits the operationalization of this success criterion and the information was available for those employees seeking it, little effort was placed on specifically educating the internal employees about this indicator. The task to communicate the NWoW was left up to the human resources department, which absorbed it in the informal communication and culture of the corporation [1]. They make sure employees know about the possibilities of NWoW, but this is the only way the indicator is communicated. Outside the HR department however, little communication is dedicated to the NWoW indicator. Therefore, strictly speaking, the KPI is being communicated in the entire organization, but because how minimally this is done, the success criterion of educating the entire organization is considered to be only partly fulfilled for this KPI. Because the prominent display of the indicator about energy consumption in external and internal communication, the success criterion seems to be fulfilled for this indicator. However, because of the strong external focus of this communication, the education of the entire organization is not fulfilled to the same extent as the control groups.

Divide the operative goals over the appropriate departments

The operative goal of reducing energy consumption got divided amongst those departments that had the greatest impact on it. In a top-down manner, measures were implemented in the most impactful areas. For example, the energy intensive data centers, were produced to minimize energy consumption. However, no indicators about energy consumption were assigned to employees regarding their day-to-day practices. That means that the criterion is considered to be met reasonably well for this indicator, given that the corporation reached its targets for this indicator. However, theoretically, bottom-up approaches from all different departments could also contribute to energy consumption, so there might still be room for improvement to include these. The NWoW is not divided amongst appropriate departments at all. Just like the energy consumption, it is known how much the goal is. However, unlike the energy consumption, there is not a top-down plan as to what departments can contribute what share to this goal. Therefore, for the NWoW, this success criterion is not considered to be fulfilled.

Goals add up to the operative goals

The energy KPI's are easily broken down to more specific KPI's and can also add up to the overall target [1]. It was relatively straightforward that the KPI on energy consumption met this criterion. A top-down target was established, which was then divided amongst energy saving measures that added up to this target. The NWoW KPI's do not add up, because they were not divided amongst the appropriate departments in the first place, only a corporate wide KPI was used [1]. Therefore, the NWoW KPI did not meet this success criterion.

Horizontal agreement

The CSR KPI's are established by control groups (in Dutch: 'stuurgroepen'), see also success criterion 2.1. These groups discuss with the involved departments what indicators to pursue before they reach agreement. The energy targets are horizontally agreed upon, because there needs to be agreement between different parties what part can be contributed to this target. Whereas with the NWoW, the targets are determined by a more top-down approach and as mentioned in success criterion 2.3, these are not further divided to different departments and therefore no agreement was reached between these departments either.

Increasing number of indicators at lower management levels

There is no real cascading of KPI's for energy consumption (see 5.4 sustainability group). This is due to the top-down approach of reaching this goal. So only the large energy consumption posts are mapped and tracked by the corporation.

However, due to the nature of the indicator, more specific measurements are easily retrievable at different sites at any point that it is required to guide action. "Probably those numbers are easy to retrieve, because energy consumption is always measured" [1]. For these reasons, the fulfillment of this success criterion is considered to be ambiguous. The NWoW indicator on the other hand, clearly lacks this success criterion. It is only broken down into an indicator for own employees and an indicator for services that allow external parties (other business, consumers) to engage in the NWoW [1]. For employees, the indicator is only measured at a yes or no basis, which is the very minimum to provide data on this indicator. For the external parties, only the amount of services sold that can enable NWoW are being accounted for, whereas in reality every service can allow NWoW to a different extent. The CSR manager clearly indicates this lack: "Now this indicator only accounts for the amount of services sold, whereas a service enabling a large corporation for the NWoW has far greater impact than that of a SME" [1].

Individual goals

Finally, the success criterion of having clear individual expectations is not relevant for the energy KPI, this because most individuals in the organization do not influence this KPI due to KPN's top-down approach [1]. This success criterion for the NWoW is closely related to the previous success criterion. Because, the fact that this KPI does not translate to multiple more specific indicators, leaves the individual goals maximally at this generic level on a yes or no basis. The NWoW can be influenced by individual employees, but no clear expectations are set. Human resources facilitates the use of the NWoW, but this leaves room for interpretation by the employee as to what the expectations are. This can lead to the corporate or departmental culture to set the standards, which is why clear individual expectations could improve this situation [1].

Success Criteria	*Energy*	*NWoW*
Clear metrics to reflect the vision	√	√
Weights assigned	×	×
Different management levels involved	√	√
Educating the corporation about KPI	●	●
Divided amongst appropriate departments	√	×
Goals add up	√	N/A
Horizontal agreement	√	×
Increasing number of indicators	●	×
Clear individual expectations	N/A	×

Table 7: Overview of the fulfilment of success criteria in the CSR KPI's. Based on their operationalization.

5.3 Comparison – Successful differentiation and the success criteria

In this section, the fulfillment of all success criteria will be compared for both the control groups as well as the sustainability groups. This comparison clearly shows the relation between the fulfillment of the success criteria and the successful or unsuccessful differentiation of the operative goals. For this purpose, an overview of the fulfillment of the success criteria and the resulting degree of successful differentiation, is provided by table 8. These associations provide a general insight in the validity of success criteria, which is then supplemented by exposing some the underlying mechanisms that led to successful differentiation stemming from the in-depth interviews. These mechanisms are explained by providing illustrative examples for each success criterion and could be responsible for the relation between the success criteria and successful differentiation.

Success Criteria	Market share	NPS	Energy	NWoW
Clear metrics to reflect the vision	√	√	√	√
Weights assigned	×	×	×	×
Different management levels involved	√	√	√	√
Educating the corporation about KPI	√	√	●	●
Divided amongst appropriate departments	√	√	√	×
Goals add up	√	N/A	√	N/A
Horizontal agreement	√	√	√	×
Increasing number of indicators	√	√	●	×
Clear individual expectations	√	√	N/A	×
Successfully differentiated	√	√	●	×

Table 8: Overview of the fulfilment of success criteria in all studied KPI's for comparison along with the KPI being successfully differentiated or not.

The relation seems to be true for the more conventional indicators as well as the sustainability indicators. The success criteria that were verified in the control groups, related to successful differentiation of the sustainability KPI's, whereas non- or partial fulfillment of the criteria in the sustainability group lead to non- and partial successful differentiation respectively.

5.3.1 Success criteria

Clear metrics to reflect the vision

The most important implication of this case study concerns the first success criteria; having clear metrics to reflect the vision. Namely, in literature this criterion is presented as if the operative goals should be decided on after establishing the vision. In this case study, however, the sequence was the other way around. The vision followed from what the corporation was already doing and what the corporation was doing was largely based on the operative goals being pursued. Given the fact that this vision was already established, the closest thing that could be tested for is that the operative goals could follow from the corporate vision as if they were consciously translated from the vision. Or in other words, if the operative goals logically follow from the vision, which is the criterion confirmed here.

Assign weights to operative goals

Another success criterion that was different from the hypothesized criteria was weighting the relative importance of the operative goals. This criterion was not fulfilled for any operative goal and was therefore the only success criterion that was not fulfilled for the control groups. However, in comparing the data for this criterion for the control groups with that of the sustainability indicators, an interesting difference emerges. Although there were no weights assigned to both the control groups, there was consensus about the fact that the control KPI's could not be pursued at the expense of the other. If one or the other KPI was not successfully pursued, management had to justify the results. No such clear rules were mentioned for the sustainability KPI's. Therefore, it seemed that although specific weights for an indicator might not have been necessary to be successful, clear rules regarding the priority of indicators were needed. The latter is actually fulfilled in all the successfully differentiated KPI's and not in the unsuccessful KPI group. This criteria relates to successful differentiation, because it leads to effort towards maximum results for both KPI's without compromise. At KPN, this led to coordination towards what the corporation was trying to achieve, or in other words; the vision. At the same time, this prioritization without specific weights, left managers with enough freedom to make minimal trade-offs to their best insight, which was indicated to be essential for day-to-day practices. *"Of course management can focus more efforts on one indicator that is lacking, but in the end, they are evaluated on both indicators"* [15]. Clear rules regarding the priority of indicators is therefore a potential success criterion.

Involvement of different management levels

The success criterion about involvement of different management levels seem to be fulfilled in all studied groups of KPI's. However, there does seem to be a difference in the extent of this involvement in between successfully and unsuccessfully differentiated indicators. Namely, the successfully differentiated indicators have multiple management levels involved in each translation of a KPI to lower management levels, whereas the sustainability groups were developed by a development group that had some representatives of the higher management levels in it. Therefore, there might still be a relationship between the extent of involvement of different management levels and the successful differentiation at KPN. This because the involvement of different management levels at every translation of the indicators, indirectly involves all management levels of the whole organization, aligning practical feasibility with ambitions from top management. If only a few management levels are involved in the initial indicator development process, there might still be a disconnect from top-management to the practical feasibility throughout the organization.The latter might explain why the sustainability indicators were not perceived to provide guidance to day-to-day practices. A possible refinement of the criterion might be that different management levels need to be involved for every translation of a KPI towards lower management levels.

Educating the entire organization about the operative goal

This success criterion also seems to relate with a positive outcome of differentiating indicators. Only the fulfillment of this criterion for the energy KPI was ambiguous. Strictly speaking, the energy KPI was in line with the operationalization of this criterion. Namely, specific attention in corporate communication. However, the goal of the criterion was educating the organization, not the strong external focus of the communication about the energy KPI. So it was observed that even with specific communication about a certain KPI, still vast differences in awareness existed. The distinction was mainly that if a KPI was mainly internally communicated, there was a high awareness of the KPI, whilst when the KPI was mainly externally communicated there was not. This may be because employees did not directly link externally communicated KPI's to their own daily practices. If this distinction between internal and external communication is taken into account, the success criterion can be said to be partially fulfilled for energy which corresponds to the partial successful differentiation of the KPI.

Divide the operative goals over the appropriate departments

The fulfillment of the success criterion about dividing the operative goals also seems to associate with successful differentiation. This indicator also seems relative straightforward in that a corporation can only be aligned towards the vision if the entire corporation is aligned towards that vision, not just some departments. KPN clearly demonstrates this by for example even accounting for the contribution of marketing to the sales indicators. This makes sure that all the departments that can contribute to a certain operative goal, do so because their performance is measured on it. Which ensures the whole organization being coordinated towards the corporate vision, rather than every department focusing only on their own task while losing track of the corporate vision.The criterion therefore seems to hold for this case study. *"We want to achieve our market share in the most efficient way. Therefore, all departments should contribute what they can towards the overall goals of the organization"* [6].

Goals add up to the operative goals

The success criterion of the goals adding up to the goals at higher levels, seems to relate to successful differentiation as well. Although, this criterion was not applicable to two out of four indicators, this study still provided a real-world example of the significance of this indicator. Namely, the studied cases clearly showed that some of the indicators could not numerically be broken-down to multiple parts, which is an obvious argument why the criterion does not always apply. An example is given by the NPS. For the other KPI's however, it seems logical that if the KPI's are divided amongst multiple departments, that these separate indicators also add up to the indicator it was divided from to reach successful differentiation. Namely, if the operative goals coordinate towards the vision, the sum of the parts of these operative goas, cannot be different than the whole. What the importance of this success criterion is by itself is hard to tell, because it is closely related to the previous success criterion. Namely, if that criterion is not fulfilled, by definition, this criterion cannot be fulfilled either. Fulfillment of the previous criterion on the other hand, does not necessarily mean this criterion is fulfilled as well. An example of this would be when the market share in this study would be a shared indicator by both sales and marketing, but their respective targets would not add up to the overall goal. Although this scenario was indicated by one interviewee to be not very likely: *"It wouldn't be very realistic to set a certain target, without checking whether the contributing departments even add up to this target"* [15]. That this success criterion is closely related, yet different than the last criterion, makes sense considering that this success criterion followed from Hoshin Kanri, an approach that builded on the success criteria of the BSC.

Horizontal agreement

This success criterion could be tested particularly well at this corporation, because of its complexity and different departments. This because in an organization of this size, all the departments have to face the same way to achieve coordination towards the vision. The fulfillment of this indicator seems to associate to successful differentiation. What could be observed in KPN is that when this criterion was not fulfilled, no department took responsibility over the indicator that should have been pursued. The result is that some department contribute towards an indicator more than others, whereas others don't contribute at all, because they assume it is the responsibility of other departments. *"Basically everyone agrees with each other about all the KPI's. Otherwise nobody would take responsibility"* [17]. This leads towards successful differentiation in the same way as dividing the goals over the appropriate departments. Because, if the goals are divided amongst all department for full coordination towards the vision, it does not have any benefit if no department takes responsibility.

Increasing number of indicators at lower management levels

This indicator seems to associate with successful differentiation as well. Especially the control group KPI's satisfied this criterion very clearly. In those operative goals, the number of indicators contributing to the operative goal, kept increasing with every management level. This led to successful differentiation by clear guidance to day-to-day practice. A clear example was provided by the NPS, which linked the indicators at the store level, to five different indicators, of which the employees knew how to influence them. The sustainability indicators though, did not satisfy this criterion. The energy KPI was ambiguous on this criterion, but the results in terms of successful differentiation was as well. The NWoW did not satisfy this criterion and was also successfully differentiated to lesser extent.

Individual goals

This success criterion also seems strongly related with the previous success criterion. That is, when there is an increasing number of indicators at lower management levels, then it follows that at the lowest management levels (the individual) there is the most indicators and thus the most performance guidelines on how to influence the overarching indicator. This lead to clearer individual expectations. Because the individual knows this is what the corporation expects, it is more clear what the role of the individual is in achieving the goal of the corporation or the vision. This increases successful differentiation, because this clear role provides a sense of purpose and motivates towards achieving the corporate vision. *"I know exactly what KPN expects from me in terms of sales and I know that if I do that, I provide value to the organization"* [18]. This is also what is observed in the results, when there were clearly increasing number of indicators in lower management levels, the success criterion about individual goals was also fulfilled and successful differentiation was also reached. This criterion is still considered to be separate from the last one though, because an increasing number of indicators, does not necessarily mean that the number of indicators and their usefulness will be sufficient at the individual levels. The latter is partly displayed by the energy KPI. This indicator partly satisfies the criterion on an increasing number of indicators, whereas no individual expectations were present whatsoever.

6. DISCUSSION

6.1 Applicability of literature as a framework for successful differentiation

If all the fulfillment of the success criteria for all the indicators are compared along with their successful differentiation, there indeed seems to be a relation between the fulfillment of most of the hypothesized success criteria and the successful differentiation of the indicators. However, there wasn't a vast amount of cases that were studied, so the main insights were inferred from the interviewees' insights in the mechanisms beyond the success criteria. This led to the success criteria from literature being predominantly confirmed, although there were some important refinements to the criteria, that made otherwise meaningless success criteria, meaningful to this real-world case. Some of these refinements were already briefly touched upon in the results. These modifications are summarized in table 9. Following table 9, the main modifications of the success criterion from literature will be discussed and if these modifications can be justified without deviating too much from the original theory. This will show the implications for the usefulness of the studied literature as a framework for successful differentiation of indicators.

Phase	Identified success criteron	Refined success criterion
Translating the Vision	1.1. Clear metrics to reflect the vision	1.1. The operative goals follow logically from the vision.
	1.2. Assign weights to metrics or groups of metrics	1.2. There are clear rules about the relative importance of top metrics.
Communicating & Linking	2.1. Involvement of different management levels in setting goals	2.1. Involvement of different managmeent levels for each iteration that a goal is translated to a lower management level.
	2.2. Educating the entire organization about the operative goals	2.2. Educate the entire organization about the operative goals and use internal communication specifically about the operative goals.
	2.3. Divide a share of the operative goals over the appropriate departments	2.3. Divide a share of the operative goals over the appropriate departments and make sure that numerically divided goals add up to the overarching goal.
	2.4. Make sure the divided goals add up to the operative goals	
	2.5. Horizontal organizational agreement on which targets and indicators should be pursued.	2.4 Unchanged
	2.6. Increasingly add additional indicators in lower management levels if this increases practical guidance	2.5 Unchanged
	2.7. Translate departmental or group goals into individual goals to make individuals understand their contribution to the corporate vision	2.6 Unchanged

Table 9: Overview of the most important differences between the criteria distilled from literature and the indicators meaningful for this study.

Although the success criterion about having clear metrics to reflect the vision, could not be tested at this corporation, the success criterion still seems to have merit. This because in reality, corporations will often already have operative goals in place before establishing a vision. As explained by Collins & Porras (1996) a vision is usually not established from scratch, but retrieved from the corporate culture. It makes sense that Kaplan & Norton (1996) did not account for this possibility, because the BSC was developed for corporations that currently mainly pursue financial goals that are not in line with the corporate vision. So these corporations by definition, already have a corporate vision without operative goals that guide the corporation to satisfaction. Outside the target corporations of the BSC, the vision might be constructed with well-differentiated indicators already in place. For these reasons, the modification of this indicator seems justified.

The second main difference with the criterion from literature is the step of assigning weights to the operative goals. That this study found no significance of this indicator as is, but found an altered criterion to be meaningful can also be explained by the origin of the BSC. This criterion too followed from the BSC. Assigning weights is proposed there, because the BSC deals with developing new indicators. If an entire set of indicators is new, employees have no information about their relative importance from experience and hence exact weights can provide a solution. In this study however, the control groups were already established for a long period. Therefore, although this was not formally established, there was a clear understanding of the relative importance from one indicator to the other. This understanding probably developed organically and through repeated feedback on management throughout the years. This is why it is argued that although understanding of relative importance seems important in both literature and this case study, clear rules can suffice as opposed to exact weights.
The arguments mentioned by Kaplan & Norton (1996) & Witcher & Chau (2007) for involvement of different management levels, also seemed responsible for successful differentiation here. However, this case study provided a unique insight in regard to this success criterion. Namely, the size and complexity of the organization, illuminated an extra option rather than involvement of all management levels; the involvement of multiple (but not all) management levels at each translation of an indicator. This is a more practical approach that can more easily be achieved in practice for organizations with tall organization structures[1]. This seems to be a realistic refinement of the criterion from literature.
The next implication is about the success criterion of educating the entire organization. The implications from this study are not specifically about the definition of the criterion. Namely, the criterion indeed seemed to be important to provide guidance to day-to-day practices. However, Kaplan & Norton (1996) are not specific about what is required for successfully educating the organization. So here the criterion was operationalized as there being specific communication about the indicator. The case however, illuminated that a strong external focus of this specific communication, can still achieve poor results. More significant results were achieved by specific communication about an indicator, with an internal focus. The latter is an important distinction that increases practical applicability of the criterion coined by Kaplan & Norton (1996).
Finally, this study found two criteria to be closely related. Namely, the criterion of dividing the operative goal over appropriate departments and the goals add up to the overarching indicator. In further research, it would make sense to join these to criteria together. This because the criteria about goals adding up is not even relevant for a group of indicators that cannot be numerically divided. Logically this makes sense, because when a goal is divided amongst different departments, these divided goals should add up to goal they are derived from. It makes sense that these criteria were found to be closely related, because the last criteria was derived from Witcher and Chau (2007) who actually proposed it as an addition to the balanced scorecard from which the first success criterion was derived.
Summarizing, it seems like the success criteria taken from existing literature can serve as a framework for successful differentiation of indicators as well as sustainability indicators. The modifications that were needed for some of the success criteria to be meaningful, seemed to be a logical consequence of applying certain literature outside its original context. Some of the success criteria could even be used without modification.

6.2 Limitations

The success criteria as identified in this study, seem to relate to the successful differentiation of indicators. This relation also seems to hold for sustainability indicators, where failing to fulfill these criteria corresponded to unsuccessfully differentiated sustainability indicators. However, only a couple of operative goals could be mapped to serve as cases, which causes a couple of limitation regarding the size of the data collection. This was because the data needed to properly map how all the aspects of the corporation relate to those mentioned in literature and to map how the indicators cascaded throughout the organization was largely unavailable. The few cases caused there to be multiple criteria with the same outcome (being fulfilled, ambiguous or un fulfilled) in every group. These different outcomes corresponded to the same outcomes for successful differentiation, so a possible correlation was identified. The limited insight in the relation between the success criteria and successful differentiation due to limited cases studied, was mainly resolved by going in-depth to expose certain causal mechanisms. However, some of these mechanisms still relied on limited anecdotal evidence. Therefore, although the framework as a whole seems to have merit, it is possible that the significance of individual success criteria are over or under estimated.
The relevance of individual success criteria is even further obscured, by the fact that some of the success criteria seemed to be closely related. That is, when one criterion was fulfilled, the probability of other criteria being fulfilled was also higher. This could be the result of the criteria being selected from too few sources. Another reason could be that multiple success criteria were identified, that actually were prerequisites of a single phenomenon.
Another important limitation relates to the exploratory nature of this research. Namely, the framework that was developed, was based on literature that was applied for the first time in this specific context. Although the specific mechanisms provided insight in the potential of this framework, because of the complex case study design and the large exploratory research, not all these mechanisms could be explored to great extent or be further triangulated. This is why

[1] A tall organizational structure means an organization with a lot of management levels (Jones, 2010).

it is argued that this study provides a well-argued starting point for further research, but is at this point still backed by limited empirical evidence.

It seems like the most important limitations to this study, were due to the limited time and scope. Namely, not a lot of cases could be studied and by trying to go in depth for so many different criteria for different indicators, the amount of anecdotal evidence for each criterion was limited. These limitations seem a typical consequence of the exploratory nature of this study. The limited, but meaningful results however, provide a good starting point for further research.

6.3 Recommendations for further research

This study provides a first step of translating theories from other fields of literature towards this specific purpose. It does so by firstly operationalizing all the success criteria that are mentioned in literature. Because no such operationalization existed before, this improves the practical applicability of different bodies of literature to this new field and possibly as a management tool in the future. It then went one step further to also test this framework and incorporate the first real-world complications as feedback for the proposed framework. It also provides mechanisms as to how these success criteria related to successful differentiation in this case study. These mechanisms provide stronger arguments for the relevance of the success criteria, which should allow future research to more confidently study the relevance of these criteria.

Further research could possible study the success criterion in more cases. May it be more operative goals with the same success criteria or more in depth research about individual success criteria. The success criterion about translating the vision for example, was only tested on one vision in this study. In this vision, multiple aspects could be identified, that were translated to multiple operative goals. This served as multiple cases to study the success criteria of translating the vision. However, it does not show any problems or indications that could be inherent to this vision. That is, additional conclusions could be drawn for this step if multiple translations from the vision will be studied from multiple companies. Possibly a study focusing on this first step at multiple corporations, could provide more insight in this success criterion.

Future research should account however, for the fact that data collection can take even longer than in this study. In this particular instance, the data collection and the mapping of the corporation, could only be completed with satisfactory results, because KPN only recently made a lot of progress in terms of formalization of several vital elements of the corporate structure. Examples of which are: the WHY document (vision), the value driver tree (cascading KPI's) and the customer journey dashboard. For further research the time-consuming element and the complexity of correctly mapping basic academic terminology of a company, must be accounted for. Possible recommendations are to simplify the case study or limit the scope to fewer success criteria.

CONCLUSION

It appears the BSC strengthened with other theories that relate to indicator development, can serve as a theoretical framework for the development of successfully differentiated KPI's. The following success criteria were tested. 1. Clear metrics to reflect the vision. 2. Assign weights to metrics or groups of metrics. 2.1 Involvement of different management levels in setting goals. 2.2 Educating the entire organization about the operative goals. 2.3 Divide a share of the operative goals over the appropriate departments. 2.4 Make sure the divided goals add up to the operative goals. 2.5 Horizontal organizational agreement on which targets and indicators should be pursued. 2.6 Increasingly add additional indicators in lower management levels if this increases practical guidance. 2.7 Translate departmental or group goals into individual goals to make individuals understand their contribution to the corporate vision. Most of these success criteria showed an association with the indicators being successfully differentiated, in depth interviews provided insight in the causal relation between these success criteria and successful differentiation. The case study also showed some limitations of the success criteria from literature which needed to be adjusted before being applicable on a real-world case.

Clear metrics to reflect the vision, showed to be irrelevant, because the vision at KPN was established after the top-metrics were already in place. From that it followed that having operative goals that follow logically from the vision, is the first success criterion for successful differentiation of indicators. The success criterion about weighing the relative importance, showed to be impossible in many situations, because of the inability to express everything in numbers. The refinement proposed for this indicator was that there should be clear rules in place about the relative priorities of certain indicators, not necessarily weights. This criterion does seem to relate with successful differentiation of indicators. The criterion about involvement of different management levels showed to be always fulfilled, an important distinction however, is that different management levels are involved at every iteration of translating an indicator further. It showed that the well-differentiated indicators, clearly fulfilled this criterion. The success criterion about educating the entire organization about the indicator, was operationalized as KPI specific communication being used. However, the case pointed out how this could still result in poor understanding of the KPI. The operationalization should therefore be refined to specific communication about the KPI towards employees as opposed to external communication only. The latter success criterion did show a relation with the successful differentiation of an indicator. The last alteration was to the success criteria of the KPI's adding up to the overarching goal. This criterion seemed to be conditional on the KPI of dividing the KPI over the appropriate departments. It seems that in the case of a numerical KPI, this should always be done in a way that the divided indicators add up to the overarching indicators. For all the indicators that cannot numerically be divided, this latter success criterion was found to not be necessary for successful differentiation. The other success criteria could be tested as they currently are and were confirmed to contribute to successful differentiation.

The identified success criteria showed strong relation with the successful differentiation and arguments were distilled from interviews as to how this relation worked. Because of the limited cases that could be studied here and because there were always multiple success criteria with the same value outcome for every case, some criteria might show false relations to successful differentiation solely based on this study. Hence, this research presents a set of success criteria with strong arguments as to why these work, however it is left for further research to verify each success criterion independently and strengthen the proposed framework with empirical evidence.

Recommendations for the corporation

Because the refined set of indicators (as displayed in table 9), show a strong potential of explaining the successful development and differentiation of indicators, the main recommendation relates to adjusting the sustainability indicators to fit these criteria. This advice relates more to the NWoW indicators than to the energy consumption. This because the energy consumption seems to be successful in reaching its targets by following a clear top-down approach. For this indicator, it is recommended that management decides on whether it wants to take energy savings even further and whether they want to possibly burden employees with this. Because for greater energy savings, the top-down approach will have to be supplemented by a bottom-up approach involving efforts by employees. Only if the energy savings are to be taken further, the refined success criteria should be implemented to greater extent. If not, the current indicators seem to be sufficient for the top-down approach chosen by the corporation.

Although based on this research, it is hard to determine what the contributions are of the specific success criteria, the set as a whole is clearly associated with successful differentiation. For this reason, it is recommended that the (NWoW and other sustainability indicators) should try to fulfill as much as of the same success criteria as the control groups as possible. KPN already made some important steps in this area by incorporating sustainability as such a central part in the corporate vision. This satisfies the first success criterion and should not be lost out of sight even with future strategy development or refinement. However, looking at the other success criteria and to what extent these are being fulfilled, a large discrepancy emerges between the sustainability indicators and the conventional indicators. Closing this gap might invoke counter arguments as to why sustainability indicators should not be integrated in the same management processes or get the same attention as the conventional indicators. These arguments were already encountered in some of the interviews [1],[6]. However, it seems to be a logical consequence, that as long as the indicators will not be considered worth of the same time and effort as conventional indicators, these will also not be as successful.

Although the role of specific criteria may not yet be evident, the fact that the criteria are so interrelated makes a strong argument as to why the whole set of criteria cannot be ignored. There seems to be no shortcuts for successful differentiation of sustainability indicators, but efforts towards one of the criteria can quickly cascade to fulfilling the other criteria. A good starting point might be to include some of the sustainability indicators in the same management processes as the conventional indicators. By starting to integrate the indicators more in other management processes (meetings or management letters), more management levels and different departments will be involved. This will prevent the indicators of getting lost in higher management levels and will results in a better education of the organization about the indicators. This will lead to an increased input to develop useful indicators. Which can lead to extra and more specific indicators being developed. The more specific indicators in turn, may provide indicators at the individual level to guide day to day practices. Even when a sustainability indicator really is incompatible with the core business, the fulfillment of the success criteria will lead to this being discovered in an earlier stage so the indicator can be altered or discontinued. When eventually, the indicators will be integrated for a longer period of time, clear expectations on the relative importance of these indicators will start to develop.

The inclusion of sustainability indicators might start off as a formality that doesn't really demand the same attention as the more established indicators, however, it seems like a good starting point to slowly integrate the sustainability indicators in the core business process. This integration cannot be understated as it is an argument often made in integrated management systems literature and also mentioned by some of the interviewees [6],[15].

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Appendices

Appendix A – List of abbreviations

BSC	Balanced scorecard	A management tool introduced by Kaplan & Norton (1996), that introduces multiple perspectives to a corporation to help corporations steer away from a strict financial focus
CSR	Corporate social responsibility	Name of the internal sustainability efforts. CSR is commonly defined as corporate efforts that go beyond compliance to benefit society.
KPI	Key performance indicator	An important indicator that measures performance.
NPS	Net promotor score	Score that lists how likely a customer is to recommend the brand to others
NWoW	New way of working	Name of a project within KPN to promote employees and clients to use solution that enable remote working for sustainability purposes.
RET	Retention	Corporate jargon; retention sales are customers that renew their contract with the service provider.
SBSC	Sustainability balanced scorecard	A refinement to the balanced scorecard. Multiple authors (amongst which Figge et al., 2002) introduced an extra perspective to the BSC; the stakeholder perspective.
SO	Sim-only	Corporate jargon; sim-only contracts are contracts that are sold without including hardware, just service.
TBL	Triple bottom line	A common attribute of sustainability goals; an environmental, social and financial aspect.
WHY-document	The WHY document or greenprint	A widely referred to corporate document that formally states the vision of the corporation.

Appendix B – Interviews & Other sources

Topic of Interest:	Name:	Function:	Date:	Reference No. #
Explorative	[redacted]	CSR Manager	Apr, Jun, Jul, Aug, 2016	1
	[redacted]	Privacy & Security Officer	22 Jun	2
	[redacted]	Head Legal	28 Jun	3
	[redacted]	Master Blackbelt, 6 Sigma	29 Jun	4
	[redacted]	Master Blackbelt, 6 Sigma	5 Jun	5
Vision, Strategy & Strategic goals	[redacted]	Strategist	3 Aug	6
	[redacted]	Manager Strategy & Consulting	6 Jul	7-
	[redacted]	Customer Experience Manager	9 Aug	8
General KPI's	[redacted]	Controller	3 Aug	9
	[redacted]	Consultant (Nextgen Finance)	17 Aug	10
	[redacted]	Controller	22 Aug	11
Control KPI's (NPS)	[redacted]	Lean 6 Sigma, Customer Journey	3,22 Aug	12
Control KPI's (Market Share)	[redacted]	Controller Commercial	26 Aug	13
	[redacted]	Information Analyst	29 Aug	14
	[redacted]	Sr Specialist Reporting & Analysis	7 Sep	15
	[redacted]	Chain manager Retail	12 Sep	16
	[redacted]	Business Controller Sales	16 Sep	17
Guidance day-to-day operations	[redacted]	Sales Agent	14 Sep	18
	[redacted]	Sales Agent	15 Sep	19
	[redacted]	Office employee headquarters	30 Sep	20
	[redacted]	Regional Manager	30 Sep	21

Topic of Interest:	Corporate Document:	Internal/External	Date:	Reference:
Additional info + verification	Integrated report ' 15	External	Feb 2016	A
	Integrated report ' 15 Dutch Summary	External	Feb 2016	B
	Capital Markets Day Presentation	External	Mar 2016	C
	Management Letter	Internal (partly disclosed)	Jul 2016	D
	Quarterly Results Booklet	Internal	Q1 2016	E
	Quarterly Results Booklet	Internal	Q4 2015	F
	KPN Experience Greenprint	Internal	Q2 2016	G
	Customer Journey Dashboard	Internal (working document)	Aug 2016	H
	Value Driver Tree Summary	Internal	Aug 2016	I
	Intranet (Team KPN)	Internal	2016	J

Appendix C – Interview template

This template served as a starting point. It was deviated from when more in-depth insight could be achieved by asking further. Also, it was modified for every interviewee regarding to their specific expertise.

Exploratory

Corporate vision & Cascading of goals

Q1: What are the highest-level goals at KPN?

Q2: What is the vision of KPN?

> **Additional questions when no vision can be recalled**
> From Collins & Porras (1996)
>
> 1. What are the core values of KPN?
>   a. Would these values be just as relevant in 100 years?
>   b. Would these values be pursued even if they posed a competitive disadvantage?
> 2. What is the core purpose of KPN?
>   a. WHY is KPN doing what it is doing? (Ask this why question up until 5 times in a row!)
>   b. If a buyer would buy the corporation for money that would be more then fair, accounting for all the future cash flows, what would be a reason not to take the deal?
> 3. Are there any long term goals that KPN hopes to achieve in the future?
> 4. What should the corporation look like in 20 years from now?

Q3: Can different aspects of the vision for sustainability and other subjects?

Control groups (well-established indicators)

Q1: What are the highest-level goals at KPN after the vision?

Q2: What are some of the most important KPI's at KPN?

Q3: What KPI's have been around for a long time?

Q4: Are there any non-financial KPI's that have been around for a long time?

Q5: Which of the aforementioned KPI's are considered to be successful?

Sustainability groups

Q1: What are some operative goals relating to the strategic goal of CSR?

Q2: Are there any operative goals with a strict environmental or social focus?

Q3: Which of the CSR goals are already employed for longer periods of time?

Q4: Which KPI's belong to these goals?

Main data collection

Successful differentiation and success criteria

Primarily from interviews with lower management levels.

Questions marked with ● could perhaps be answered better by higher management. However, they will always be asked when possible for triangulation and because of the possible unavailability of higher management. When there is a shortage of time, these will not be asked.

Successfully differentiated

Q1 (Open): What are the KPI's by which you are guided in your function?

Q2 (Suggestive): Are you familiar with KPI "…"?

Q3 (Suggestive): Does KPI "…" provide guidance to day-to-day practices?

●**Q4:** Does KPI "…" contribute to the vision of KPN?
Does KPI "…" contribute to the strategic goals of KPN?

●**Q5:** Do you miss certain KPI's regarding the "…" vision/strategic goals of KPN?

Succes criteria:

●**Q6 (Succes criterion 2.1):** Has this department been involved by the development of the KPI and the goals that are related to it?

Q7 (Succes criterion 2.2): Is it known to which goals this KPI contributes within KPN? If yes, how is that communicated?

●**Q8 (Succes criterion 2.3):** Are there other departments that contribute tot he same goals?

[Succes criterion 2.4 is checked in hindsight by comparing different interviews]

●**Q9 (Succes criterion 2.5):** Was there a discussion between the departments that are mentioned at "question 8" about the feasibility of pursuin a certain indicator.

●**Q10 (Succes criterion 2.6):** Are there multiple KPI's that contribute tot he same goals as mentioned at question 4 & 5?

Q11 (Succes criterion 2.7): Is it clear what the personal expectations are in regard to the indicator of the operative goal?

Interviews with higher management or employees with insight in the entire corporation from headquarters

Q1 (Succes criterion 1.1): Are there strategic goals that are measured by KPI "…"?

Q2 (Succes criterion 1.2): Is it clear what the relative importance is of different KPI's that are reported to the executive board? That is, how important is one KPI in relation to the other?

Q3: (Succes criterion 2.1): Where different management layers involved by developing the KPI's that are pursued for the operative goals?

+ ● Questions

Appendix D – Coding Tree

To order the data, the different phases in data collection were roughly distributed in 3 steps. The nodes for the coding of the interview were then organized according to these steps. The steps were as follows:

Step 1a) What is the corporate vision?

Step 2a) What are appropriate operative goals to map control KPI’s?

Step 2b) What KPI's related to operative goals are well established in the organization?

Step 3a) Are the identified operative goals translated correctly to provide guidance in day to day practice?

Step 3b) What success factors are present in the translation of the vision to KPI’s for the identified operative goals?

○ Step 1a) ○ Step 1b)	● Corporate Vision ● Official Goals ● Strategic Goals ● Operative Goals	
○ Step 2a) ○ Step 2b)	● KPI Mentioned ● Time KPI in use ● KPI mentioned in corporate documents ● Importance of KPI	● Control KPI #1 ● Control KPI #2 ● Control KPI #1 ● Control KPI #2 ● Control KPI #1 ● Control KPI #2 ● Control KPI #1 ● Control KPI #2
Step 3a)	● Control Group 1	● Mentions KPI autonomously ● Is familiar with the KPI ● Provides guidance in day-to-day activities ● Lack of guidance
	● Control Group 2	● Mentions KPI autonomously ● Is familiar with the KPI ● Provides guidance in day-to-day activities ● Lack of guidance
Step 3b)		● Additionally identified success criteria
	● Control Group 1	● 1.1 Matches vision ● 1.2 Weight ● 2.1 Vertical agreement ● 2.2 Communication of KPI ● 2.3 Divided amongst multiple departments ● 2.4 KPI's add up ● 2.5 Horizontal Agreement ● 2.6 Increasing # of indicators ● 2.7 Clear individual expectations
	● Control Group 2	● 1.1 Matches vision ● 1.2 Weight ● 2.1 Vertical agreement ● 2.2 Communication of KPI ● 2.3 Divided amongst multiple departments ● 2.4 KPI's add up ● 2.5 Horizontal Agreement ● 2.6 Increasing # of indicators ● 2.7 Clear individual expectations