Einkauf, Logistik und Supply Chain Management
Hrsg.: Christopher Jahns

Anna Quitt

Measuring Supply Management's Budget Effects

Introduction of Return on Spend as an Indicator of Supply Management's Financial Effectiveness

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RESEARCH

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Einkauf, Logistik und Supply Chain Management

Herausgegeben von
Univ.-Prof. Dr. Christopher Jahns

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With a foreword by Prof. Dr. Michael Henke

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Foreword

Performance Measurement is currently one of the most talked about topics in Purchasing and Supply Management (PSM) – in research as well as in business practice. However, it is not simply a business fad; researchers already introduced the Balanced Scorecard, a performance measurement method, to PSM a few years ago. A more novel idea in this context is measuring the budget impact of PSM – its financial effectiveness.

In business practice, only 10-20% of supply management's effectiveness can be identified retrospectively in the P&L account with current measurement methods. Thus, PSM is often criticised for only being able to demonstrate its efforts on presentation charts, so-called "powerpoint savings". Therefore, researchers were requested to support practitioners in finding a solid and feasible solution to the problem of savings measurement. The derived solution measures PSM's financial effectiveness by integrating the function in the budgeting procedure, based on the following hypothesis: Only when supply management addresses its planned savings potential already in the budgets, it can show its comprehensive bottom line effect.

Dr. Anna Franziska Quitt has addressed this issue in her doctoral thesis, "Measuring Supply Management's Budget Effects. Introduction of Return on Spend as an Indicator of Supply Management's Financial Effectiveness" in order to investigate this hypothesis and either confirm or refute it. Her research applies a comprehensive approach to Supply Effectiveness Measurement and thereby lays a solid foundation for future work by venturing into uncharted territory in science and practice. The objective is to determine whether and, if so, how supply management's budget effects and return on spend can be measured in a transparent and traceable way.

Dr. Quitt applied a creative approach to this contemporary issue by linking different empirical research methods. As a first empirical step, a large-scale survey was conducted, which already provided very interesting and new insights about the status quo and future requirements of supply management savings measurement practices. Based on these results in combination with the findings from literature analysis, she developed first drafts of a budget effects measurement process. However, in order to meet her personal objective of developing a holistic and feasible process of measuring supply management's financial effectiveness based on the Design Sciences, Dr. Quitt further enhanced the measurement process design in a second step by performing in addition a long-term case study, a focus group, and two parallel single case studies within the scope of a hybrid qualitative research strategy. Based on her deep practical insight and the various derived contextual issues, which could occur in measuring supply management savings, she was able to transform each Design Proposition into a concrete Design Rule. These Design Rules offer variable context-based interventions to

support supply managers in substantiated measurement of budget effects. Therefore, the contribution of this application-oriented research to solving practical problems in measuring supply management's financial effectiveness can be evaluated as very high.

The strength of Dr. Anna Quitt's work is demonstrated in her ability to comprehensibly place the different empirical research steps of her work in logical order, draw precise conclusions and derive a concept to comprehensively and solidly measure supply management's financial effectiveness with implications for science and practice.

I am certain this dissertation will find broad readership.

Wiesbaden, November 2009 Prof. Dr. Michael Henke

Preface

Writing a doctoral thesis is like going on an adventure. First, you have this vague idea about reaching a special destination – in my case, this was the achievement of the doctoral degree. Then you look more closely into the subject and you decide to become sort of a pioneer in this field. With this ambition, you equip yourself with all the relevant material and information. At this point in time, the adventure has already begun and the journey starts – the journey to discover the unknown. In my case, this was the development and design of a valid and feasible concept for measuring supply management's bottom line impact. During an adventure, different approaches have to be used and stages be passed through to reach the final destination. In the course of this journey, I have gained many experiences and broadened my skill set. However, this would not have been possible, if I had not met people along the way, who supported me in good as well as critical situations. I want to thank all of them.

However, there are certain persons, whom I want to thank in particular: First, I want to thank Professor Dr. Michael Henke, who enabled me as my first supervisor to do a doctorate. Based on his applied research approach, I was able to gain deep insight into practice, experience its immediate issues, and eventually obtain direct input for relevant research findings. I also want to thank Professor Dr. Ronald Gleich for accompanying me as my second supervisor. He always fostered my applied research approach and supported my work through constructive and very helpful feedback.

One major stage during my doctoral studies was my stay at the Supply Chain Research Centre at the Cranfield School of Management. I want to thank Dr. Mark Johnson and Marko Bastl for inviting me as a research student and for their focus group collaboration and support. Together with Professor Alan Harrison and Heather Skipworth, they provided me with significant input for conducting and analysing my qualitative research.

In addition, I would like to thank all practitioners, who participated in my survey and returned their questionnaire. Although I cannot mention the participants by name, I want to thank BeautyCo, BevCo, HealthCo, PhoneCo, and SmoCo for their research collaboration.

I want to thank Bernd G. Bucher not only for his flexible proofreading activities, but especially for our discussions about all the different challenges during this time.

Above all, I want to thank my family. My parents have always been standing behind me, supporting my educational career. Together with my brother Johannes, they were always there and provided me with all the support, which I required along the way. Therefore, I would like to dedicate this doctoral thesis as acknowledgement of gratitude to my family.

Medlingen, November 2009 Dr. Anna Franziska Quitt

Overview

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List of Abbreviations

$	=	U.S. Dollar (USD)
£	=	Pound Sterling (GBP)
ABB	=	Activity-Based Budgeting
ABC	=	Activity-Based Costing
ABP	=	Affiliate Budget Planning
BE	=	Budget Effects
BME	=	Bundesverband Materialwirtschaft, Einkauf und Logistik
BOM	=	Bill of Materials
BSC	=	Balanced Scorecard
BU	=	Business Unit
BY	=	Business Year
CAPEX	=	Capital Expenditure
CC	=	Cost Centre
CDI	=	Cost Development Index
CEO	=	Chief Executive Officer
CFO	=	Chief Financial Officer
CFRoI	=	Cash Flow Return on Investment
CIMO	=	Context – Intervention – Mechanism – Outcome
COO	=	Chief Operating Officer
CPO	=	Chief Purchasing Officer
CR	=	Cost reduction
DOC	=	Degrees of Confidence
e.g.	=	for example (‘exempli gratia’)
EBIT	=	Earnings before Interest and Tax
Ed(s)	=	Editor(s)
ed.	=	Edition
EFQM	=	European Foundation for Quality Management-Model
EVA	=	Economic Value Added
FB	=	Financial Benefit
FMCG	=	Fast Moving Consumer Goods
GM	=	General Manager
HoP	=	Head of Purchasing
HQ	=	Headquarters
i.e.	=	that is (‘id est’)
I^1	=	Intervention 1, etc.
IC	=	Internal Customer

KPI	=	Key Performance Indicator
Mat#	=	Material number
NOPAT	=	Net Operating Profit after Tax
OPEX	=	Operational Expenditure
PO	=	Purchase Order
PSM	=	Purchasing and Supply Management
RfQ	=	Request for Quotation
RoI	=	Return on Investment
RoS	=	Return on Spend
SM	=	Supply Management
SWOT	=	Strengths, Weaknesses, Opportunities, and Threats
TCO	=	Total Cost of Ownership
UK	=	United Kingdom
UoA	=	Units of Analysis
vs.	=	versus
WACC	=	Weighted Average Cost of Capital

1 Problem Set and Course of Investigation

"Show Me The Money!"
(From the film 'Jerry Maguire' by Cameron Crowe, 1996)

With this quote, the mission of this thesis has been defined. The above demand literally reflects supply management's recent situation: CFOs require more than just savings being reported; they want to see savings' financial impact on the corporate bottom line. CFOs want to be shown the money, accomplished through supply management's daily practices as an expression of the function's corporate value contribution. "The P&L impact has become more important since 2006", as a respondent from the banking sector indicated in the conducted survey. However, a comprehensive approach, which makes supply management's bottom line impact tangible from a holistic point of view, could not be found – neither in literature nor in practice. Thus, supply management's journey starts here – in the search for an adequate approach to measure its bottom line impact precisely and comprehensively.

1.1 Supply Management's Bottom Line Impact – A Never Ending Issue?

FROM PURCHASING TO SUPPLY MANAGEMENT

During the last decade, discussions about the development of supply management to become more strategic and loosen its original role of being the "lone commodity buyer" (Zheng, Knight, Harland, Humby, & James, 2007, p. 78) have been going on (Blascovich & Markham, 2005; Burt, Dobler, & Starling, 2003; Ellram & Carr, 1994; Gadde & Håkansson, 1994; Jahns, 2005). Purchasing was viewed as infrastructure (Carter & Narasimhan, 1996, p. 6), which accomplished clerical tasks on demand (Cousins & Spekman, 2003, p. 20). Consequently, purchasing evolved to be a reactive and isolated, operating function. Its strategic reputation and value contribution were classified to be less significant compared to other departments (Carr & Pearson, 2002, p. 1033), since "most department heads and often their people think that they can buy better than purchasing does" (Bales & Fearon, 1993, p. 7). However, a change in purchasing was enforced by the dynamic international markets: Globalized trade, technological innovations, and more demanding and informed consumers represent only some drivers (Tassabehji & Moorhouse, 2008, p. 56). Meanwhile, purchasing was responsible for the procurement of assets, which already equalled more than half of the average manufacturing company's sales volume (Henke, 2009, p. 33; Jahns, 2005, p. 2). Companies had realised that continuous improvement and sustainable cost reductions became pivotal for corporate success (Carter & Narasimhan, 1996, p. 8; Van Weele & Rozemeijer, 1996, p. 154). It became evident that businesses could not rely on the clerical understanding of purchasing any more (Mehra & Inman, 2004, p. 712), since it directly affected the bottom line through total costs (Burt et al., 2003, p. 10).

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With such a high lever on the corporate cost situation, the potential of the purchasing function to become a competitive advantage was evident. "The perception of 'value added' is critical to every function or department in any organization [!] in today's business environment" (Bales & Fearon, 1993, p. 6). As a consequence, purchasing had to lead the profession to excellence through an elaborated set of strategic practices and capabilities (Cousins & Spekman, 2003, p. 20). "These demands led to the evolution of supply management from an administrative function to a strategic one" (Giunipero, Handfield, & Eltantawy, 2006, p. 823). However, the requirements to turn purchasing into a corporately recognised and provable unique selling proposition remained still unclear.

Characterisation of Supply Management

In current literature, a common definition of strategic purchasing cannot be found. Following Carr and Smeltzer (1997, p. 200), "strategic purchasing refers to the planning process purchasing follows as part of the strategic management process[…] setting goals, establishing strategies, analyzing [!] the environment, evaluating strategies, implementing and controlling strategies". Paulraj, Chen, & Flynn (2006, p. 108) characterised strategic purchasing regarding its strategic focus, strategic involvement and status of purchasing professionals. Because of these management-oriented characteristics, Jahns (2005, p. 29) discusses the term 'supply management' as a management function, which supports the "strategic-oriented philosophy of competitiveness" (Mehra & Inman, 2004, p. 711). This advanced view on strategic purchasing is adapted within this thesis.

Observed Trends in Supply Management

Due to this "evolutionary transition" (Narasimhan & Das, 2001, p. 596), the expectations towards supply managers increased, realisable through some major trends (Figure 1), which reach towards supply management's organisational embodiment.

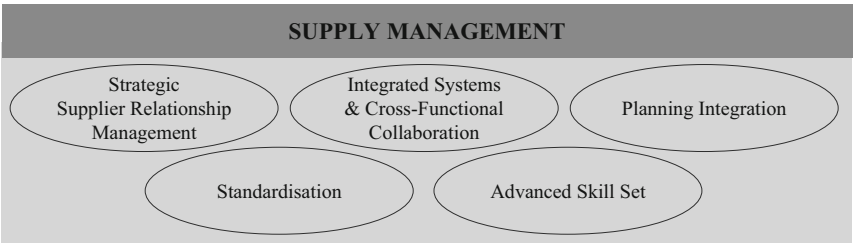

Figure 1: Major supply management trends.

- **Strategic Supplier Relationship Management** (Figure 2) provides a strategic buyer-supplier platform for long-term partnerships (Kästle, 2004, p. 38). It became supply managers' task to proactively evaluate, initiate, and coordinate this network (Chen, Paulraj,

& Lado, 2004, p. 505) and become confident in inter-company and -cultural interaction (Giunipero et al. 2006, p. 834; Spekman, Kamauff, & Salmond, 1994, p. 81).

Figure 2: Components of supplier relationship management.

- **Integrated Systems and Cross-Functional Collaboration** function as internal platforms for knowledge exchange (Carter, Carter, Monczka, Slaight, & Swan, 1998, p. 25) and are necessary as supply managers often cannot dispose of detailed technical knowledge (Mehra & Inman, 2004, p. 714).
- **Planning Integration** is necessary to enable supply managers to align their achievements with corporate goals (David, Hwang, Pei, & Reneau, 1999, p. 14) and obtain supply-relevant planning information, since supply management must ensure – due to decreasing inventory levels – the right quantities, at the right time, of the right quality, and at the right place (Mehra & Inman, 2004, pp. 713-714).
- **Standardisation** gains importance in the context of fierce global competition, since resources have to be utilised efficiently (Zheng et al., 2007, p. 73). As companies have encountered that important synergy effects can be realised when information on commonalities is shared within the company (Van Weele & Rozemeijer, 1996, p. 157), supply management was also expected to be able to contribute to technical discussion.

Figure 3: Profile of a world-class supply manager equipped with technical and soft skills.

- **Advanced Skill Set**, therefore, became a major prerequisite for each supply professional to implement and realise the necessary changes to enhance supply management's organisational position, and to manage the globally uncertain and complex market situations (Cousins & Spekman, 2003, p. 23; Tassabehji & Moorhouse, 2008, p. 56). Giunipero et al. (2006, p. 836) require from a world-class supply manager (Figure 3) skills in the fields of strategic planning, communication, team building, and technology.

The supply professional was now expected to be a dynamic relationship manager with cross-functional knowledge, who aimed at maximising customer value (Tassabehji & Moorhouse, 2008, p. 65). Soft skills became as essential as technical purchasing skills. Therefore, the more strategically oriented and value adding supply management was the higher management's recognition of how the functional achievements and internal status were expected to be (Ellram & Liu, 2002, p. 32). Again, the challenge was proof of the tangibility of this added value.

The Need to Show Functional Bottom Line Impact

Returning to Jerry Maguire, based on the above development, and claimed enlargement of supply management's scope of responsibility and competence, top management wants to see the resulting monetary effects of these activities. It requires proof of the financial return of these strategic activities for further investment into supply management's development. If supply management does not add provable and sustainable value in the form of profit contribution, the outsourcing of the function will pose a valid option in today's competitive environment (Roylance, 2006, p. 24). Despite its development from operating purchasing to strategic supply management, the function does not yet gain equal corporate recognition for its value contribution, since it is currently not able to show the effects of its quantitative and qualitative achievements at the corporate bottom line through reliable figures. Therefore, to mitigate this precarious situation, supply management is forced to further elaborate on its strategic advancement, but simultaneously needs to produce a solid value contribution measurement approach if it wants to reach its goal: becoming an equal business partner. It is supply managers' task to make sense of the relevant environment in which to act rather than react, and recognise in advance which supply strategy contributes positively to the strengthening of the firm's strategic, financial, and operational position in the global competition (Bakker & Kamann, 2007, p. 304). It also becomes their task to show the monetary impact of their achievements in a reliable, tangible, and well-founded manner. Both missions need to be fulfilled and can potentially even be combined in the course of the growing "need to professionalize, rationalize and globalize [!] […] purchasing operations" (Van Weele & Rozemeijer, 1996, p. 156). But how?

1.2 Objectives and Research Questions of this Thesis

"The important thing in science is not so much to obtain new facts as to discover new ways of thinking about them." (Sir William Bragg, 1862-1942)

The discussion about measuring supply management's bottom line impact involves three different topics: supply management, performance measurement, and management accounting. Standard literature has been published for each of these topics (e.g. Burt et al., 2003; Gleich, 2001b; Horváth, 2003; Jahns, 2005; Neely, Gregory, & Platts, 1995; Weber & Schäffer, 2006). However, the combination of all three – the overall view – has so far scarcely been covered (Ellram & Birou, 1995; Ellram & Liu, 2002; Wagner & Weber, 2007). In none of the cases has an integrated measurement approach been developed, which combines the claim for precisely measured savings and supply management's advancement as a corporate function. Since numerous performance management approaches have already been discussed in the literature, the wheel shall not be re-invented for this problem set, as advised by Lohman, Fortuin, and Wouters (2004, p. 271). Thus, following the statement of the Nobel prize winner, Sir William Bragg, the already elaborated knowledge in each of the above topics will be analysed and combined to design a best practice measurement process for supply management's bottom line impact that enables the function, as supported by Roylance (2006, p. IX), to integrate itself in the corporate setting, deliver savings, and contribute to corporate goals such as shareholder value and customer satisfaction. The design of such a comprehensive and solid, but also innovative measurement process is the overall objective of this thesis.

Thereby the following research questions are discussed:

- What is the current fit between supply management's functional development and supply performance measurement and which requirements does a future-oriented savings measurement approach have to fulfil in general?
- How is supply savings measurement realised in practice and which concrete steps become necessary for measuring savings in the budgeting context?
- What is the savings measurement reality in practice and how does the innovative savings measurement concept have to be designed correspondingly in detail to comply with the requirements of enabling supply management to become an equal business partner and measure its bottom line impact in a sustainable way?
- Which factors – of an enabling as well as inhibiting nature – have an impact on the implementation of the designed measurement concept?

1.3 Course of Investigation

The complex topic of measuring supply management's budget effects was structured as an iterative research process, which is shown in Figure 4.

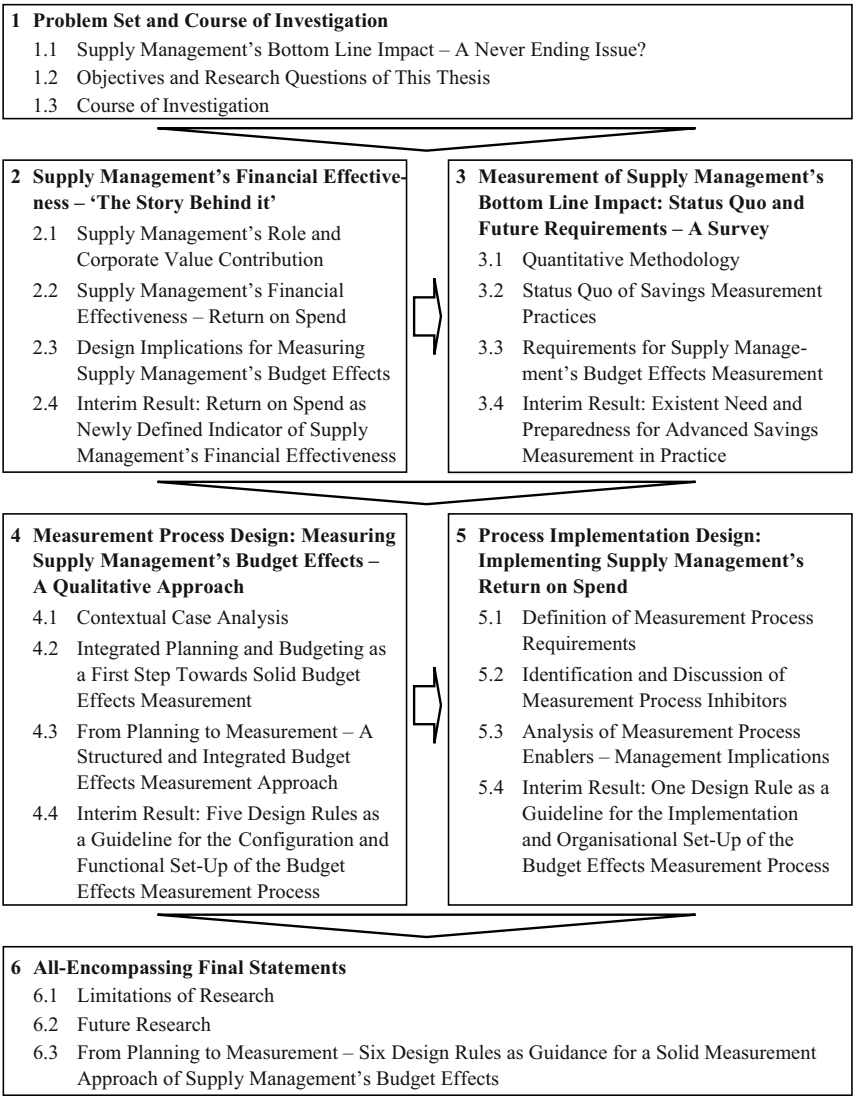

Figure 4: Course of investigation.

The relevance of this recent measurement topic and its problems form the focus of **Chapter 1**. Having realised that measuring supply management's budget effects involves research across three different disciplines, the problem gains complexity, which is also noticeable in the scope of the research questions as they are based on the overall objective for the design of a contemporary measurement process: Measuring savings accurately and enforcing supply management's role as an equal business partner.

Having shown that the measurement issue is obviously biased through a perception gap regarding supply management's self- and corporate perception, leading to a principal-agent problem, the necessity of measuring supply management's financial effectiveness becomes concrete in **Chapter 2**. Since supply management's financial effectiveness is expressed through savings, whose measurement practices face strong criticism, the function's integration into process-based budgeting appears to be the adequate frame of reference for measuring its bottom line impact. The theoretical results of this literature review yield an initial, still generic process draft, which has now to be further developed through empirical research in the subsequent chapters. It becomes obvious that an iterative design process is required to obtain a best practice measurement approach, based on valid prescriptive knowledge. Thus, the design sciences are selected as an adequate philosophy of science for this thesis.

In the context of a large-scale survey, whose quantitative outcomes are discussed in **Chapter 3**, a first broad insight into current savings measurement practices, with their chances and deficiencies is obtained. Having approved the topic relevance also by practice, the reasonability of the different measurement components and supply management characteristics, through which the first process draft was operationalised, are queried. As a result, a second, advanced measurement process draft is designed, which defines roles and communication patterns between the relevant involved budgeting parties. In addition, six process design propositions are formulated, following the principles of the design sciences.

Further investigation of these design propositions forms the starting position of the qualitative case research within Chapters 4 and 5. By means of a longitudinal case study, a focus group, and two single case studies, the stated context within each design proposition is tested prior to their individual concretion. Each design proposition is turned into a design rule indicating several interventions to achieve the targeted outcome in the budget effects measurement context. In **Chapter 4**, the focus lies upon the procedural design rules – how to design and perform a meaningful savings measurement process – the hard facts, resulting in the final process draft.

The process implementation, with its inhibiting and enabling 'soft' factors, is emphasised in the last design rule, in **Chapter 5**.

The research limitations and future research are discussed in **Chapter 6**, concluding with all-encompassing statements, which summarise the results of the different empirical investigations and put them into context.

2 Supply Management's Financial Effectiveness – 'The Story Behind it'

Supply performance measurement is a widely discussed topic with numerous concepts, frameworks, and even more important: best practices. They were created for measuring supply management's overall performance. Nevertheless, it is not clear yet if they are valid for measuring supply management's bottom line impact as well. Therefore, as a first step in approaching this fuzzy topic of measuring supply management's financial effectiveness, the measurement background is provided within this chapter. The relevance of measuring supply management's financial effectiveness is the focus in 2.1. Supply management's perception, its required scope of responsibility compared with its status, and the resulting perception gap are discussed from a principal-agent perspective due to the required change of existing systems and introduction of a new mindset. Having shown the necessity of measuring financial effectiveness, existing performance measurement approaches are analysed regarding their adequacy for this particular measurement issue in 2.2. Since obviously no established performance measurement system fits the measurement requirements of the newly defined 'Return on Spend', which primarily focuses on savings as an effectiveness indicator, the decision was taken to develop an innovative process for measuring supply management's financial effectiveness, with the focus on the savings refinement. The initial draft of the process design is presented in 2.3, specifying design sciences as an adequate research approach.

2.1 Supply Management's Role and Corporate Value Contribution

"Somehow, it is as if the two parties are not talking the same language" (Roylance, 2006, p. 24), referring to the relationship between supply management and finance. However, this statement can be extended to the recent relationship between supply management and corporate management: supply management, which claims to be treated as an equal business partner based on its broadened scope of competence, and corporate management, which does not accept the claimed value contribution based on the lack of proof. To obtain a thorough understanding of the background of this perceived discrepancy, the existence of a perception gap is covered in 2.1.1. Having reached the conclusion that supply management has to aim for an effective level as the final development stage, the scope of supply management's value contribution is analysed from the stakeholder perspective in 2.1.2. Measuring supply management's bottom line impact in the context of a required change in mindset, refined performance definition, and cooperation patterns, coupled with altered requirements from stakeholders, will involve more than just deriving a new measurement approach from existing ones within an established organisational setting. In this course of change, uncertainties as well as diverging interests are likely to emerge. Therefore, the problem is approached from the agency perspective in 2.1.3.

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2.1.1 Effective Supply Management – Key for Becoming an Equal Business Partner

If the supply management trends had been realised effectively, supply management would enjoy the same strategic reputation as other corporate functions already do and its corporate value contribution would undoubtedly be accepted. Thus, apparently there have to be reasons that several sources in literature show a gap between supply management's self-perception regarding its corporate added value and top management's perception. Bales and Fearon (1993, p. 13) concluded that "if purchasing is doing the job that literature says it is capable of, it should be rated as providing high value by a much larger number of CEOs/Presidents". Even though Zheng et al. (2007, p. 74) found that supply management's recognition depends on contextual factors, the impression appeared to be that supply management was not as integrated in strategic decision making as expected, despite its advanced skills. Ellram and Liu (2002, p. 31) argue that supply managers "often don't fully recognize [!] their financial responsibilities. And because of this they have difficulty conveying to top management [their] specific role […] in the company's overall financial performance". Johnson and Leenders (2006, p. 340) concluded from their longitudinal study that "the path to achieving full status as an equal player among the other key functions in the organization [!] is not a straight line up". Trent (2004, p. 16) found that supply management is considered important only in the case of contributing effectively to organisational goals and strategies. In addition, purchasing professionals often believe supply management's role is undervalued (KPMG International, 2008, p. 9). Tassabehji and Moorhouse (2008, p. 63) state that there is a "schism between [procurement professionals'] perception of their role within their organization [!], and the organization's [!] perception".

This does not mean that supply management has not undergone any strategic development, but that its realisation has not been conveyed and communicated effectively to the other corporate layers – leading to a perception gap (Figure 5). Supply managers unanimously agree upon their strategic corporate achievements and their value added. They are trained to acquire comprehensive skills and aim at full supply market transparency. Supply management apparently wants to reach Cavinato's (1999, p. 80) last strategic level, i.e. becoming an equally integrated business partner that can exploit its entire capacities for the strengthening of the firm's competitive position – or in other words, to become a functional peer (Reck & Long, 1988, p. 6). Supply management sees itself as on the best way to approaching this goal (Paulraj et al., 2006, p. 117). In contrast, however, supply management still focuses – despite its strategic advancement – on tactical performance measures such as price reductions (Cavinato, 1999, p. 79; Ellram & Liu, 2002, p. 34). The function is not yet focused on trying to show its holistic value contribution (Trent & Monczka, 1998, p. 7).

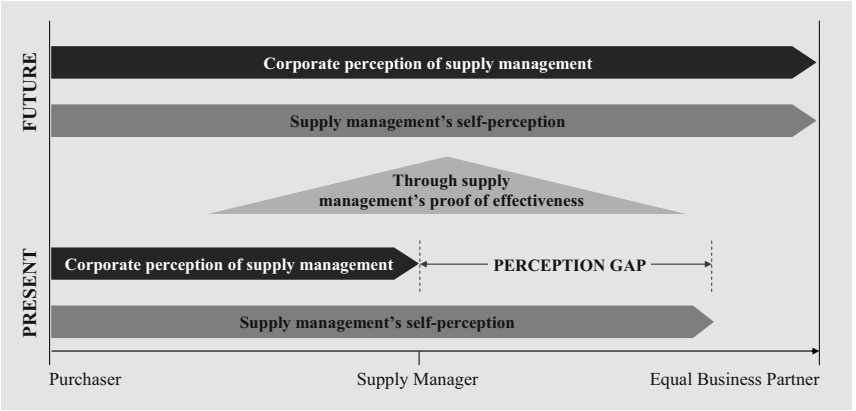


Figure 5: Gap between supply management's self-perception and corporate perception.

Consequently, management and other internal functions still perceive the purchasing professionals as functional supply managers whose concerns lie only within the supply rather than corporate scope and hence, prevent supply management from being involved in corporate strategic decision-making and planning processes. Therefore, management cannot yet realise the degree of supply management's corporate performance impact achieved through its advanced capabilities (Tassabehji & Moorhouse, 2008, p. 63) and refuses to recognise it as an equal business partner. If supply management wants to be treated strategically, it has to measure its strategic performance (Cousins & Spekman, 2003, pp. 21-22). To prove its bottom line impact, supply management needs to show the effects of its achievements – **its effectiveness**. Thus, supply management's responsibilities have to shift from efficiency to effectiveness and from a functional focus to an organisational focus (Ellram & Liu, 2002, pp. 32-33).

Today's critical factors regarding performance measurement are the constantly increasing expectations of executive management towards supply management and its profit contribution due to the various propositions undertaken and communicated by supply management (Carter et al., 1998, p. 18). Since management and shareholders have realised the necessity for supply management's advancement (Johnson & Leenders, 2006, p. 332), they demand from supply management, in its new strategic role, to capture value from the supply markets (Blascovich & Markham, 2005, p. 44). Nevertheless, as long as management is not able to prove the effectiveness of supply management's communicated achievements on the corporate bottom line in a reliable and objective manner, it will not recognise them as a direct value contribution and supply management not as a full business partner (Bales & Fearon, 1993, p. 12; Ellram & Liu, 2002, p. 31). The need for proving effectiveness also appears from the

supply management perspective to give a growing sense of frustration; supply management is currently not able to show its full capabilities. As a result, supply managers lack motivation, performance will stagnate, and change in organisational perceptions will not be achievable (Tassabehji & Moorhouse, 2008, p. 63; Van Weele & Rozemeijer, 1996, p. 160). Supply managers want to be rewarded for their achievements in the figurative sense, so management's recognition becomes necessary. The existence of a gap between how management perceives supply management's contribution potential and the performance it is actually getting (Goh, Theng Lau, & Neo, 1999, p. 13), has become more and more concrete. As Roylance (2006, p. 2) puts it: "The worth of the purchasing function is never adequately rewarded and recognized [!] by top management". Supply management seems to be stagnating in its current development. Although it is already involved in strategic and cross-functional interaction, it will not be able to reach the top – the integration into corporate decision-making as an equal partner – if it does not prove its strategic relevance (Paulraj et al., 2006, p. 109).

Figure 6: Development from clerical purchasing to effective supply management.

Thus, supply management needs to modify its understanding of value contribution and its measurement practices to gain full strategic recognition and show its effectiveness on the corporate bottom line in an objective and reliable way (Figure 6). This leads to the challenge especially for the accounting function "to update the traditional measurement systems to bring them more in line with the strategic emphases that firms are pursuing today" (Cavinato, 1999, p. 82). "The transition to more appropriate measures clearly requires a major shift in the

mindset of managers and researchers alike" (D'Souza & Williams, 2000, p. 227). The strategic supply management focus still has to be pursued. However, to become equally accepted on a sustainable basis, strategic supply management has to direct its practices towards effectiveness – becoming **effective supply management**.

2.1.2 Purchasing Performance Versus Performance of Purchasing – A Modified Understanding of Supply Management's Value Contribution

BOTTOM LINE IMPACT-RELEVANT STAKEHOLDERS

"Who are the important stakeholders […] and what do they want and need?" – this is, according to Neely, Adams, & Crowe (2001, p. 6), a relevant question before the concretion of any measurement process, since performance measures without having considered the expectations of critical addressees will be a failure and of short-term nature (Perrini & Tencati, 2006, p. 297; Wisniewski & Stewart, 2004, p. 223).

	Affected and interested stakeholders		**Affected, but not directly interested stakeholders**	
Concern	**Supply management's claim for equal status**		**Satisfaction of own needs**	
Individual impact	*Motivation through internal recognition*	*Evidence and proof*	*Improved quality standards*	*Improved personal business result*
Stake-holders	‣ Supply management employees	‣ Shareholders ‣ Top management ‣ Other internal functions	‣ End customers	‣ Suppliers

Figure 7: Classification of relevant stakeholders for supply management's bottom line impact.

Stakeholders are any group, or individual, that has a vital interest in the corporate development (Freeman, 2004, p. 229). Five groups of stakeholders are most mentioned: customers, shareholders, community, employees, and suppliers (Atkinson, Waterhouse, & Wells, 1997; Omran, Atrill, & Pointon, 2002; Sirgy, 2002). With regard to supply management concerns, one can distinguish between affected and interested stakeholders, and affected but not directly interested ones (Figure 7). The latter group consists of suppliers and end customers that are concerned about the entire corporate situation to ensure the satisfaction of their own needs (Degeorge, Patel, & Zeckhauser, 1999, p. 6). If supply management controls its effectiveness and the corporate cost situation, end customers will potentially observe a positive impact on quality standards (Atkinson et al., 1997, p. 29) and suppliers will potentially experience more integration, which is likely to improve their own business results (Giunipero et al., 2006, p. 831). As affected and interested stakeholders, supply employees need to visualise their performance to be motivated to further pursue their functional development and earn inner-corporate recognition (Van Weele & Rozemeijer, 1996, p. 160). Shareholders, who have

invested in the corporation, pursue the maximisation of their return based on corporate efficiency (Atkinson et al., 1997, p. 29). Monitored by shareholders, top management has a vital interest in evaluating supply management's bottom line impact to prove their own management competency (Degeorge et al., 1999, p. 1). Affected internal functions – assuming that they have already reached equal status – will call for evidence about why they should accept supply management as well.
Therefore, supply management's effectiveness indicator needs to be primarily responsive to the concerns of the affected and interested stakeholders.

The Deficiencies of the Current Value Contribution Measure

Despite its early beginnings in 1936 with Lewis, the discussion on how to evaluate purchasing's value contribution has never been concluded. Although the terms 'value contribution', 'bottom line impact', and 'effectiveness' are defined differently in detail, they are based on answering the following question: Which financial corporate effects does supply management achieve through its supply practices?

Supply management as a function has developed at a faster pace than its measurement (D'Souza & Williams, 2000, p. 227). Therefore, supply management's value contribution is often still regarded as the plain sum of price reductions and the consequences on the corporate result (Niedereichholz, 2005, p. 1). However, this approach will create incentives for permanent price-cuttings regardless of quality and reduce supply management to its operating function again (Dumond, 1995, p. 12; Ellram & Birou, 1995, p. 2). Fearon and Bales (1997, pp. 73-77) found that the measure 'price negotiations resulting in savings' was assessed as most important. Purchasing organisations demand the consideration of all value-adding outputs, such as quality, cost, time, and technology (Burt et al., 2003, p. 27), despite hard measurement conditions of qualitative aspects (Carter et al., 1998, p. 32). Despite the 42% of analysed performance indicators that emphasise price reductions and 82% that represent the quantitative perspective (Shepherd & Günter, 2006, p. 247), Chief Purchasing Officers (CPOs) evaluate price savings as an unreliable performance indicator, since they have been distorted to the high side and lack comparability (Aramyan, Oude Lansink, Van der Vorst, & Van Kooten, 2007, p. 305; Fearon & Bales, 1997, p. 77; Mol, 2003, p. 6). The reason for this is the unclear communication of measurement definitions and baselines (Bourne, Neely, Platts, & Mills, 2002, p. 1299) and their biased focus, showing only the result of past actions, but not indicating future performance. Thus, financial metrics are often not useful for proactive decision-making (Gleich, 2002, p. 8; Holmberg, 2000, p. 851; Morgan, 2004, p. 523). Besides the board, shareholders also have a high interest in accurately measured and reported earnings and savings figures (Mol, 2003, p. 48), as they are supposed to convey a solid picture of the company's viability and profitability regarding their future investment behaviour. Earnings, originating from savings, reflect the summary measure of a firm's

performance (Dechow, 1994, p. 4) and are considered by shareholders as the most important item in the financial report. "The focus on earnings is so intense that it has been suggested that the market fixates on firm's bottomline [!] income […]" (Chan, Chan, Jegadeesh, & Lakonishok, 2006, p. 1041).

However, this focus on the bottom line was misleading since the quality of earnings was ignored (Chan et al., 2006, p. 1052). Companies have used the room for personal interpretation of accounting rules, which led to mismatches of cash in- and out-flows, and revenues and expenses (Degeorge et al., 1999, p. 2) and presented the company as more attractive for investment. Because of sudden stock price declines and investment losses due to savings revisions, severe concerns regarding earnings' quality and earnings' reflection of the true operating corporate situation were found to be growing (Atkinson et al., 1997, p. 26; Chan et al., 2006, pp. 1041-1042; Dechow, 1994, p. 5). Shareholders want to be shown the money and only invest in efficient and transparent companies whose functions contribute effectively to corporate performance (Mytton, 2006, p. 28; Roylance, 2006, p. IX). Shareholders have realised supply management as essential value and a returns contributor (Burt et al., 2003, p. 10; Ellram & Liu, 2002, p. 32), but they do not believe its reporting yet. The perception gap will remain (Cavinato, 1999, p. 82) and supply management will become neither an equal business partner, nor involved early in decision-making processes (Tassabehji & Moorhouse, 2008, pp. 62-63). Thus, as a first step, the scope of supply management's defined value contribution must be widened (Jahns & Henke, 2007, p. 28) before being able to elaborate on proper effectiveness measurement.

Supply Management's Value Contribution – A Modified Definition

Analysing literature on performance measurement, most authors describe performance measurement but do not specify the performance itself. Hence, a definition of supply management's value contribution has to be developed, which comprises all those value-impacting activities which eventually lead to supply management's positive or even negative financial effectiveness.

It needs to be understood as a product of both quantitative and qualitative achievements, and be aligned with supply management's claimed strategic status. Thus, methods for obtaining 'quick wins' do not fit any more (Cousins & Spekman, 2003, p. 23). The definition of supply management's value contribution has to be focused on long-term aspects and consider future scenarios (D'Souza & Williams, 2000, p. 227). The proof of value contribution is only manageable with achievements that support company-wide objectives and find expression in the corporate bottom line (Carter & Narasimhan, 1996, p. 9; Carter et al., 1998, p. 43). Thus, the following formula, based on Giunipero et al. (2006) and Burt et al. (2003), was devised to

base the remaining thoughts on a consistent understanding of supply management's value contribution:

$$\textbf{Value Contribution} = \frac{(\text{Supply continuity} + \text{Time} + \text{Quality} + \text{Technology}) + (\text{Supply strategy} + \text{Planning integration} + \text{Cross-functional collaboration})}{\text{Cost}}$$

It is the sum of its activities that guarantees supply continuity, reduce lead times, enhance quality levels, and contribute to technology advancement (Burt et al., 2003, pp. 27-28). The effects of the development of supply strategies based on environment analyses, integration in corporate strategic planning processes, and participation in cross-functional teams, which create the basis for a sustainable competitive advantage, are added. Cost – rather than price – functions as a major performance lever, since the function is responsible for achieving direct cost reductions in the form of reasonable and fair purchasing prices (Giunipero et al., 2006, p. 832; Van Weele & Rozemeijer, 1996, p. 154) as well as indirect cost reductions through optimised processes. Supply management's value contribution hence is directly driven by the sum of positive as well as negative effects from its operating and strategic activities, and inversely driven by cost:

$$\textbf{Value Contribution*} = \frac{(\text{Operating achievements}) + (\text{Strategic achievements})}{\text{Cost}}$$

***** for strategic achievements > 0 as prerequisite

By enhancing the contribution of all components of the numerator and improving profit margins through cost minimisation, supply management realises an important impact on the firm's profit margins and gradually enhances its inner-corporate status due to achieved transparency and traceability (Ellram & Liu, 2002, p. 32; Giunipero et al., 2006, p. 832). However, positive value contribution can only be accomplished if supply management is operating on a strategic level (Ellram & Carr, 1994, p. 10).

Performance of Purchasing Versus Purchasing Performance – A New Dilemma

Having elaborated on supply management's development and future tasks, one aspect continuously stands out: corporate integration. It correlates positively with supply management's value contribution. Supply management is forced to open its functional borders and enter cross-functional collaboration to reach an equal business partner status. Therefore, it has to be discussed if it is still appropriate to talk about purchasing's functional bottom line impact or rather about the impact of purchasing as an action, established through the collaboration of the different affected functions.

Zheng et al. (2007, p. 76) realised that professionals from outside the purchasing function accomplish a major part of purchasing activities such as product specifications. Supply management is hence not able to advance its development without the support of other corporate functions (Bakker & Kamann, 2007, p. 310). Sourcing teams, in which supply management disposes of supply market knowledge, the internal customer is the demand

expert, and finance monitors the cost development, become necessary. Through such teams and their knowledge exchange, internal functions can be leveraged and external relationships coordinated more effectively (Giunipero et al., 2006, p. 835). By bundling the firm's competence in such a cross-functional setting, product and cost information can be processed jointly and efficiently, market challenges coordinated flexibly – strengthening the competitive advantage – and resources allocated effectively. Only through this collaboration is the importance of each participating function realised by the others, which eventually leads to inner-corporate balance. Thus, supply management is refined as a proactive purchasing function which coordinates, based on its advanced strategic, operating, and technical skill set as supply expert and cost challenger, a cross-functional sourcing team. Supply management's effectiveness hence refers – as a consequence of this modified understanding – to the functional value contribution, which, however, is achieved in its completeness only through this cross-functional activity of managing supply.

2.1.3 Different Issue, Participants, and Interests – A Principal Agent Perspective

The measurement approach for supply management's bottom line impact apparently needs to adapt a cross-functional supply management perspective and abolish the strict functional understanding of purchasing. Considering this and the newly defined value contribution, it becomes clear that the measurement approach of supply management's bottom line impact will differ significantly from the traditional process of reporting price reductions. Consequently, the degree of measurement uncertainty will increase: Neither top management nor other internal functions can clearly judge if supply management acts pursuing corporate goals or if it tries to establish its own independent sub-system. Due to this uncertainty, a principal-agent problem emerges (Figure 8).

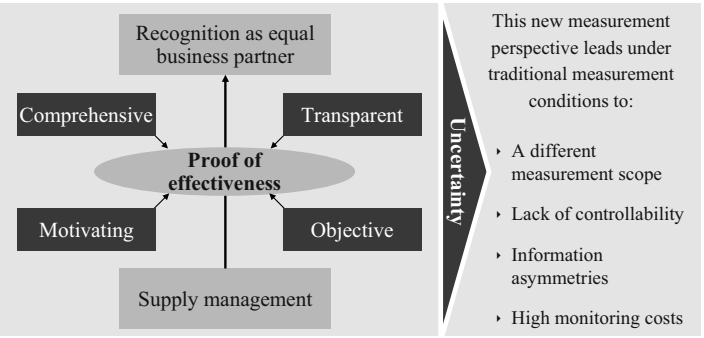


Figure 8: Bottom line impact measurement leading to a principal-agent problem.

In its process to gain recognition as an equal business partner, supply management must prove its effectiveness, thereby fulfilling the relevant stakeholders' requirements. Supply management is concerned with measuring its achievements comprehensively, covering all value-adding aspects. For comparison and evaluation reasons, top management and shareholders demand transparency and objectivity. Motivating, as the last attribute, reflects the fact that supply management is losing motivation to enforce its further development due to lacking recognition. Therefore, effectiveness measurement shall function as part of a supply management reward system.

However, this new measurement perspective with its different focuses and requirements, will lead to a high degree of uncertainty for all stakeholders, if existing performance measurement systems remain unchanged. The scope to be covered is broader than the traditional price reduction focus, because the effects of qualitative and cross-functional achievements also have to be captured. Hence, no clear measurement guidance can be provided so far, creating room for subjective performance interpretation and lack of controllability, which hinders transparency and objectivity. Since management has to face high monitoring costs to reduce these information asymmetries, it becomes a question of the principal agent theory.

A Short Overview of the Agency Theory

According to the Nobel prize winner Ronald Coase and his works on transaction costs and property rights, a company only continues to exist as long as its coordination function is more efficient than the market function and the one offered by competitors. Consequently, a firm survives as long as it can allocate resources efficiently (Brunner, 1992, pp. 10-11). This is not only valid for a corporation, but also for corporate functions (Gleich & Temmel, 2007, p. 14).
The CPO needs accurate and reliable information to justify supply management's existence for the board and shareholders. Thereby, the CPO is the principal, who has to rely on supply management as agent, to receive the relevant information (Grüning, 2002, pp. 154-155). An implicit contract is established between principal and agent. The CPO is not able any more – due to the complex measurement scope – to give explicit instructions about how to obtain precise measurement results (Laux, 1990, p. 3). Their realisation can only be enforced via internal incentives and sanctions, instead of legal persecution (Ebers & Gotsch, 2006, p. 260).
Both contract partners are driven by self-interest (Fama, 1980, p. 289) and rationally bound (Eisenhardt, 1989a, p. 59). Thus, opportunistic behaviour and diverging interests are expected (Ebers & Gotsch, 2006, pp. 261-262). The CPO requires accuracy, and supply management is expected to overstate its profit contribution, since it has to meet analysts' earnings forecasts, beat last year's savings (Degeorge et al., 1999, p. 8), and enhance its internal position and relevance for the firm. Information asymmetries and conflict of interests – as the two requirements for a principal-agent problem (Gleich, 2001b, p. 32) – emerge from this dependency. Since the CPO does not have full transparency, he cannot evaluate the results

reported by supply management. As the agent is aware of this, two agency problems may occur (Ebers & Gotsch, 2006, p. 264; Eisenhardt, 1989a, p. 61; Grüning, 2002, p. 155; Shapiro, 2005, p. 264):

- **Moral Hazard:** Due to the complex structures, supply management as agent may invest less effort than expected by the CPO for completing its task (e.g. reporting positive market developments as part of its own achievements). Since supply management is aware that the CPO will not be able to trace its efforts and judge the quality of the results, it has the opportunity to conduct hidden actions.
- **Adverse Selection:** The CPO regards supply management as expert in elaborating a supply performance measurement framework. However, due to the lack of transparency the CPO cannot judge if the designed framework is appropriate and if supply management had the necessary competence to develop this system on its own. Due to hidden characteristics, supply management could be selected as sub-optimal agent.

Those agency problems lead to agency costs (Erlei, Leschke, & Sauerland, 1999, p. 75). It is the goal of the agency theory to minimise these monitoring costs (Gleich, 2001b, p. 33) with so called "governance mechanisms" (Ebers & Gotsch, 2006, p. 265), which can be divided into agent's profit participation, directive controlling of behaviour and implementation of monitoring systems (Eisenhardt, 1989a, p. 61). This range of tools illustrates that the principal, even though he is in the dependent position, is risk neutral; the agent, however, becomes risk-averse (Shapiro, 2005, p. 265).

Implications for Measuring Supply Management's Effectiveness

To minimise monitoring costs, design a measurement approach that

- Measures and reports supply management's effectiveness in a **standardised way**, makes it comparable, and enables stakeholders to assess its validity (Gee, 2002, p. 9),
- Is **aligned** with the **processes** of the other involved corporate functions, aiming at one common measurement goal (Cousins & Spekman, 2003, p. 25; Laux, 1990, p. 1),
- Involves supply management, top management, and internal customers in a **joint planning process** – viewing the firm as "nexus of contracts" (Fama, 1980, p. 290) – and enables them to jointly set one planning direction, and specify mutual expectations and goals (Atkinson et al., 1997, p. 27), integrate the interests of all contract partners, and limit thereby the potential of opportunistic behaviour (Laux, 1990, pp. 2-3),
- Establishes a mutually accepted **monitoring system**, which maintains transparency during the savings realisation period, in which the agent still decides which activities to perform to maximise his personal advantage, fosters the maximisation of the measurement accuracy

(Gleich, 2001b, p. 33; Möller, 2002, p. 107), and uses the effectiveness measure to contract, to evaluate, and to reward (Dechow, 1994, p. 4), and

- Links the measurement process to the **incentive system** to make the agent focus on the measurement accuracy rather than self-interest (Laux, 1990, p. 6).

With a measurement approach that realises these aspects, it will become possible that both decision makers – principal and agent – are well informed and gain transparency on the other's benefit function and the consequences arising from the planned and unplanned activities. Thus, the reward function for the agent can ideally be adapted by the principal (Laux, 1990, p. 17): recognition of supply management as equal business partner.

2.2 Supply Management's Financial Effectiveness – Return on Spend

The standardised citing of 'what gets measured, gets done' and its companion 'you can't manage what you can't measure' illustrates the implicitness of performance measurement in the corporate environment and keeps it as a vital element in daily business. Proving supply management's effectiveness leads to the issue of performance measurement in general. The following question regarding the measurement of supply management's effectiveness is hence a guideline for further investigation:

IS IT POSSIBLE TO RESORT TO ALREADY ESTABLISHED PERFORMANCE MANAGEMENT SYSTEMS OR DOES A COMPLETELY NEW ONE HAVE TO BE DESIGNED?

Therefore, currently applied performance management systems are presented and discussed in 2.2.1 to achieve an adequate attribution of the problem set of effectiveness measurement. Since the measurement of supply management's financial value contribution requires the focus to be on the financial dimension of performance management, the necessity of the Return on Spend, based on budget effects, as future monetary measurement variable is elaborated under the consideration of prevalent financial key performance indicators (KPIs) in 2.2.2. The requirements of the Return on Spend for objectivity and transparency in the measurement process to minimise information asymmetries lead to supply management's integration into the corporate budgeting process, which is discussed in 2.2.3.

2.2.1 Discussion of Different Performance Management Systems as Potential Role Models for Supply Management's Effectiveness Indicator

Performance management is not regarded as "an end in itself, but a tool for more effective management" (Amaratunga & Baldry, 2002, p. 218). Traditional performance measurement approaches are frequently heavily criticised because they are often one-dimensional, operational, unlinked, incoherent, and fragmented (Banks & Wheelwright, 1979; D'Souza & Williams, 2000; Johnson & Kaplan, 1987; Kaplan & Norton, 1992; Neely, Richards, Mills,

Platts, & Bourne, 1997; Sirgy, 2002; Wickramatillake, Koh, Gunasekaran, & Arunachalam, 2007). Thus, performance measurement was advanced to performance management, which is viewed as the set-up, structure, and application of performance indicators of different dimensions. These are used for the evaluation of effectiveness and efficiency of activities, and performance potential of different corporate objects, targeting towards practices with quantifiable output, rather than qualitative achievements (Bititci, Mendibil, Nudurupati, Garengo, & Turner, 2006, p. 1345; Gleich, 2001b, p. 67; Hartmann, Entchelmeier, & Henke, 2007, p. 32; Neely et al., 1995, p. 83). Within these dimensions, KPIs are developed, which are supposed to map corporate performance from a holistic and integrated perspective, and provide management with sufficient information to obtain a clear picture of their company's past performance and future implications.

The crucial characteristic is consistency. With a solid performance management system, managers will be supported in consistent decision-making followed by consistent actions (Keegan, Eiler, & Jones, 1989, p. 48). Bititci, Carrie, and McDevitt (1997, p. 533) support this view and consider it as a "closed loop control system which deploys policy and strategy, and obtains feedback from various levels in order to manage the performance of the business". Deployment, thereby, refers to the alignment of the measures and dimensions of the system to corporate strategies and objectives, through which integrity – the interaction between business areas and levels – is fostered. Performance management systems, hence, need to comply with the following aspects to capture a company's multi-dimensional environment (Bititci et al., 1997; Bourne, Franco, & Wilkes, 2003; Gleich, 2001b; Horváth, Gleich, & Voggenreiter, 2007; Keegan et al., 1989; Klingebiel, 2000; Neely et al., 2000; Voyles, 2003):

- Efficiency and effectiveness-oriented,
- Cost and non-cost, strategic and operating performance indicators,
- Installed across different corporate levels for various time horizons,
- Incorporation of internal and external stakeholders,
- Provision of past and future oriented management information,
- Corporate communication of performance outcomes and motivation, and
- Continuous feedback and control processes.

"What you measure is what you get" becomes very complex, if all these aspects have to be covered within one performance management system. A selection of performance management systems (Table 1) is presented, which is based upon the prevalent systems, discussed by Gleich (2001b, 2002), Grüning (2002), and Neely et al. (2000). All listed performance management systems, except the RoI-scheme, represent multi-dimensional approaches trying to comprehensively capture and evaluate performance. They can be distinguished by their

System	*Initiator(s)*	*System Classification*	*Purpose & Objectives*	*Performance Dimensions*	*Indicators & Measures*	*Processes*	*System Outcomes*	*Summary*	*Applicable to Supply Management*
Balanced Scorecard	Kaplan & Norton (1992)	Management approach	‣ Consolidation of the competitive-relevant perspectives ‣ Avoidance of sub-optimisation ‣ Translation of corporate strategy into measurable objectives	‣ Finance ‣ Customer ‣ Learning & growth ‣ Internal business ➝ Causally related	‣ Financial & operating	‣ Measure development and selection in the context of the four framework dimensions, focusing on the strategic link ‣ Continuous reflection	‣ Complete view of corporate situation ‣ Balanced KPI-clusters directly linked to corporate strategy ‣ Reduced degree of personal control due to goal orientation	‣ Multi-dimensional, strategy-focused performance management ‣ Achievement of goals rather than the control of behaviour as focus	Yes (Balanced Scorecard Roll-Out)
European Foundation for Quality Management-Model (EFQM)	Corporate collabo-ration (1988)	Generic management model	‣ Competition for quality award ‣ Structured capture of the different corporate perfor-mance dimensions ‣ Performance evaluation of the entire corporation	‣ Leadership ‣ People ‣ Policy & strategy ‣ Partnerships & resources ‣ Processes ‣ People results ‣ Customer results ‣ Society Results ‣ Key performance results ➝ Argumentative related	‣ Qualitative & quantitative information	‣ Checklists for corporate performance evaluation ‣ No feedback/-forward processes intended	‣ Rather complete view of corporate situation ‣ Balanced consideration of each stakeholder's interests through weighted factors	‣ Multi-dimensional, information-focused performance measurement ‣ Fixed structure ‣ Information, no control function	No (Competition driven at corporate level)
Performance Prism	Neely et al. (2001)	Performance measurement selection and management	‣ Performance measurement selection ‣ Stimulating managers' thinking about corporate key questions	‣ Stakeholder satisfaction ‣ Strategies ‣ Processes ‣ Capabilities ‣ Stakeholder contribution ➝ Interrelated	‣ Qualitative & quantitative	‣ Measure development and selection in the context of the five facets of the framework, focusing on stakeholders' wants and needs ‣ Continuous reflection	‣ Complete view of corporate situation ‣ Balance through the focus on the reciprocal relationship between stakeholders and organisation	‣ Multi-dimensional, stakeholder-focused performance management ‣ Comprehensiveness but also individualization through five facets-design	Yes (Performance Prism Roll-Out)
Performance Pyramid	Lynch & Cross (1995)	Performance management	‣ Balanced evaluation of past processes and results for coordina-ting future develop-ment ‣ Strategic compati-bility of corporate vision and operating level	‣ Market ‣ Finance ➝ Causally related	‣ Financial & non-financial	‣ Top-down deduction of causally related goals versus bottom-up generation of measurement variables ‣ Reflection through performance loops	‣ Limited view of corporate situation ‣ Top-down decreasing, intra-hierarchical balance of goals and measures; no inter-hierarchical balance	‣ Multi-dimensional, hierarchical performance management ‣ Fixed structure ‣ Integration of strategic and operating levels through performance loops	Yes (Supply management as 'Business operating system')

Table 1: An overview of selected performance management systems.

System	*Initiator(s)*	*System Classification*	*Purpose & Objectives*	*Performance Dimensions*	*Indicators & Measures*	*Processes*	*System Outcomes*	*Summary*	*Applicable to Supply Management*
Quantum Performance Measurement	Hronec (1993)	Performance management	‣ Balanced consideration of the value- and service components ‣ Avoidance of sub-optimisation ‣ Alignment of corporate processes and strategy	‣ Cost ‣ Quality ‣ Time ➝ Loosely related	‣ Process & output performance measures	‣ Development of 'vital signs' as critical success factors ‣ Interplay of the four elements: driver, enabler, process, and continuous improvement	‣ Limited view of corporate situation ‣ Focus on activity-oriented KPIs, neglecting value-oriented KPIs	‣ Multi-dimensional, complex performance management ‣ High degree of flexibility and generalization for integrated information processing	Yes (Supply management covered in the 'organisation' and 'process' levels)
Return on Investment-Scheme	Du Pont Corp. (1919)	Performance measurement	‣ Driver and factor analysis of the RoI as corporate performance measure	‣ Finance ➝ Calculative related	‣ Financial	‣ Detection of correlations and dependencies between financial measures and the RoI through financial analyses ‣ No feedback/-forward processes	‣ Limited view of corporate situation ‣ One-dimensional RoI analysis, without direct correlation to corporate market value	‣ One-dimensional performance measurement ‣ Fixed structure ‣ Compatible to multi-dimensional controlling systems	Partially (Through formula adapations)
Tableau de Bord	Lebas (1994)	Management approach	‣ Consolidation of performance related information on critical success factors ‣ Basis for decision making and internal dialogue and action ‣ Strategy implementation	‣ Not standardised since no formal rules ➝ Causally related	‣ Physical	‣ Linking critical success factors with leviers d'action (action levers) ‣ No feedback/-forward processes intended	‣ Rather complete view of corporate situation ‣ No major link to accounting-based information and specific accounting cycles	‣ Multi-dimensional, information-focused performance management ‣ High degree of flexibility and individualisation ‣ No approach to challenge the current way of doing things	Yes (Applicable at different corporate levels)

Sources: Bourne et al., 2002; Entchelmeier, 2008; Epstein & Manzoni, 1997; Erdmann, 2003; Gleich, 2001a, b, & 2002; Gleich, Henke, Quitt, & Sommer, 2009; Grüning, 2002; Hoffmann, 2002; Horngren, 2004; Hronec, 1993; Kaplan, 2006; Kaplan & Norton, 1992 & 2001; Klingebiel, 2001; Lebas, 1994; Lynch & Cross, 1995; Neely, Adams, & Kennerley, 2002; Neely et al., 2001; Seidenschwarz & Gleich, 2006; Wagner & Kaufmann, 2004.

idiosyncratic structure (Performance Prism), mission (EFQM), or geographic spread (Tableau de Bord) and are explicatory listed to convey a picture as comprehensive as possible of the status quo in performance management. General performance management systems, without the explicit focus on supply management, are presented, since as can be seen in the last column of Table 1, most systems are transferable to supply management, either as system rollout or with supply management in its department function as an inherent part. In addition, except for the balanced scorecard, no other system was explored to be directly applied to and used as a reference model for supply performance management (Entchelmeier, 2008; Erdmann, 2003; Wagner & Kaufmann, 2004).

Performance Management Systems and Supply Management's Effectiveness

Coming back to the original question and having gained an overview of performance management systems, does it make sense and is it even possible to measure supply management's effectiveness in the context of these existing approaches?

Performance management systems consist of several KPIs, which serve as the basis for the evaluation of the effectiveness and efficiency of performance (Gleich, 1997, p. 114). Efficiency and effectiveness – both economic measures – however, differ in their definition and message (Gleich, 2002, p. 51; Neely et al., 1995, p. 80):

- **Efficiency** expresses via input-output-relations how economically corporate resources are utilised, whereas
- **Effectiveness** focuses on a clear objective and the respective output for how customer requirements are met and show the long-term goals of an organisation.

It is not questioned that efficiency as well as effectiveness have to be taken into consideration to evaluate supply management's entire performance. Performance management systems, thus, combine several dimensions and integrate various indicators to cover performance as broadly as possible. However, the structure of a performance management system shows that its overall goal is to optimise the financial dimension, which shows the effect of the qualitative dimensions (Kaplan & Norton, 1992, p. 71). The overall corporate effectiveness, hence, finds its expression in the financial dimension.

Since it is the problem set of this thesis to find an appropriate indicator for supply management's overall effectiveness, which shows the direct bottom line impact of supply management's accomplishments in the form of monetary savings, the financial dimension clearly becomes the most relevant for further investigation. Paulraj et al. (2006, p. 108) support this conclusion by relating supply management's effects on corporate performance directly to financial indicators. Neely and Bourne (2000) are critical of the effectiveness question not gaining enough attention, which was also claimed by Lewis already in 1936. Paulraj et al. (2006) state that so far there have only been a few studies concerned with supply

management's effectiveness in financial terms. Gleich (2001a) and Atkinson et al. (1997) complain that the missing focus on financial success is due to the concepts' complexity. In addition, Ittner and Larcker (1998) observed that despite performance management systems taking a broad perspective, they fail to convey a compact picture of the effect of the performed activities.

Coming back to the introductory question – whether currently existing performance management systems can be applied or not – so far, it can be concluded that a complex performance management system is neither necessary nor adequate, since for proof of the supply management's financial effectiveness, the financial dimension is relevant. However, since the effectiveness measure will show the impact of supply management's entire range of achievements, the derivation of the appropriate financial indicator needs to consider the strategic dimension as well to avoid the criticism of uni-dimensionalism. Thus, for the remaining investigation, the specified term 'financial effectiveness' is used and the original question reformulated:

IS IT POSSIBLE TO RESORT TO ALREADY ESTABLISHED MEASURES OF THE FINANCIAL DIMENSION OR DOES A COMPLETELY NEW ONE HAVE TO BE DEFINED?

Hence, in the following section, the financial dimension with its prevalent value contribution measures is analysed, especially regarding their understanding of comprehensive effectiveness.

2.2.2 Discussion of Different Financial Performance Indicators as Potential Role Models for Supply Management's Financial Effectiveness Indicator

There are two major groups of criticism in the debate on financial performance measures:

- The decreasing appropriateness of their characteristics, and
- Their – in this shape – still important role and preferred utilisation within performance management systems in the current management environment.

As motivation to develop an innovative measurement framework, Kaplan and Norton (1992, p. 71) found fault with the outdatedness of financial measures, which were based on traditional accounting assumptions made 60 years ago. Consequently, today's financial accountting measures appear to be too historical and backward looking, not providing room for cause-analysis. They lack predictive power for future decision making, reward short-term behaviour, and do not consider cross-functional processes (Ittner & Larcker, 1998, p. 217; Sirgy, 2002, p. 143). These characteristics reflect a narrow, one-dimensional, and hence suboptimal understanding of financial measures (Neely et al., 1997, p. 1131), since major corporate goals such as customer satisfaction, high quality, short cycle time, and employee motivation cannot be fostered (Kaplan & Norton, 1992, p. 77). Therefore, the argument of

lacking goal orientation emerged (D'Souza & Williams, 2000, p. 229). Johnson and Kaplan (1987, p. 254) concluded that financial measures are invalid indicators of recent business performance.

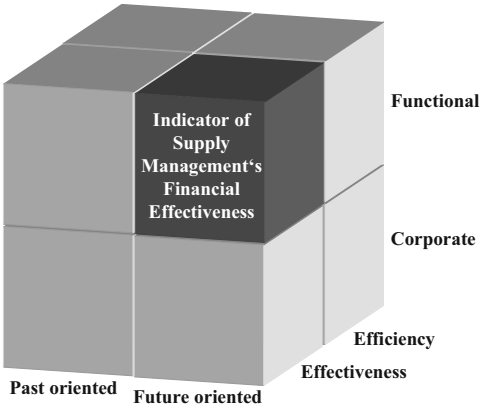
However, these financial measures still take a dominant role in current performance management systems (Johnson & Kaplan, 1987, p. 256). Ittner and Larcker (1998, p. 223) realised that many firms are still convinced that performance measures need to be purely financial. But mostly indicators are then used, which are based on internal financial standards and as a consequence due to missing external comparisons and objective information, again create dissatisfaction among stakeholders (Bourne et al., 2003, p. 15; Neely et al., 1995, p. 102). Nevertheless, the dominant role of the financial indicators does not appear to be the problem. Apparently, there are many managers who criticise the balanced scorecard approach, since it does not provide one overall performance measure on which they can concentrate their efforts (Ittner & Larcker, 1998, p. 223). "Financial performance measures indicate whether the company's strategy, implementation, and execution are contributing to bottom-line improvement" (Kaplan & Norton, 1992, p. 77). This is the requirement of a useful financial performance indicator in a general as well as supply management context: it has to indicate if the measurement object is effective or not. Now the question arises if such a financial indicator is already applied within the supply management environment.

Discussion of Financial Performance Measures

To achieve a structured and focused analysis of currently applied financial performance measures, to find out if one or several measures already satisfy these requirements, a modified classification model (Figure 9), based on Hoffmann (2002), is utilised. The axes indicate three relevant dimensions for supply management's financial effectiveness:

- Reference to time (past or future oriented),
- Reference to organisation (corporate or functional level), and
- Reference to message (effectiveness or efficiency).

Thereby, the reference to time is introduced as a new and critical dimension. Only if its calculation process incorporates the strategic planning dimension as well, leading to a future-oriented performance indicator, can management use the effectiveness indicator for coordination purposes. Otherwise, the financial effectiveness measurement remains retrospective and exposed to traditional criticism. Thus, the target indicator on the functional level, measures supply management's financial effectiveness at the business year-end and prospectively supports top management in planning decisions.



Based on Hoffmann, 2002, p. 12.

Figure 9: Measurement cube for the classification of financial performance measures.

In a study on purchasing effectiveness measures, conducted by Fearon and Bales (1997, p. 21), CPOs were asked to indicate financial measures for supply management's performance. The 'purchasing cost' cluster consisted of measures such as 'purchase dollars spend per purchasing headcount', 'average training hours per department employee', and 'department budget versus actual expenditures'. Those types of measures, which are also found in the works of Entchelmeier (2008), Erdmann (2003), and Hayes and Renard (1964), describe and evaluate supply management performance from a productivity perspective. In other words – they measure supply management's **efficiency**. Productivity is the measure of efficiency and can hence be used interchangeably (Easton, Murphy, & Pearson, 2002, p. 124). Productivity measures put in general monetary efforts in relation to monetary proceeds (Lehmann, 1958, p. 538). By means of productivity measures, inefficiencies regarding internal resource allocation are detected and improved (Wöhe, 2000, p. 48). That is why efficiency measures represent an important part of supply performance measurement; however, statements on the monetary effect of its activities on the corporate performance – their profitability – cannot be made.

The study results also indicate that leading supply performance measures derive from the field of 'purchase cost savings and avoidance' (Fearon & Bales, 1997, p. 33). This cluster lists activities for the achievement of cost savings – the direct contribution to the bottom line. Also Hayes and Renard (1964, p. 51) defined reportable savings with the help of purchasing activities, such as improved order practice, price negotiations, or improved sourcing, which ideally result in lower prices to be paid. Thus, supply performance measurement is already concerned with the question of how to show supply management's effectiveness, but so far, it does not appear possible to express effectiveness by means of one compact, unambiguously defined outcome measure.

Effectiveness of resources is measured in general through profitability measures. Profitability is a collective term for certain ratios that visualise quantitatively the degree of target achievement (Krümmel, 1964, p. 797). Profitability ratios in a broad sense put financial profit in relation to a measure that disposes of explanatory character for the achievement of the profit in the numerator (Franke & Hax, 1999, p. 173). Returning to applied supply performance measures, effectiveness per definition has not been measured yet. The operationalisation of financial supply performance through different activities, defining thereby the scope of purchasing effectiveness, actually reflects the approximation of the numerator of an effectiveness ratio, rather than effectiveness itself. So far, the denominator has not even been considered. Again, it is necessary to concretise this scope to make effectiveness transparent to stakeholders (Hayes & Renard, 1964, p. 50); however, to convey especially to top management and shareholders the monetary return and profit contribution of the function, an effectiveness ratio in its defined sense is still necessary.

It has become obvious that an appropriate measure for financial effectiveness is not yet present in the field of supply management. Thus, the corporate perspective has to be taken in the search for a role model. In the corporate context, there are several traditional profitability and value contribution measures. Three of the most prominent concepts are Return on Investment (RoI), Cash Flow Return on Investment (CFRoI), and Economic Value Added (EVA) (Ittner & Larcker, 1998).

The **RoI**, as indicator for the profitability of capital investment, captures the profit per unit of invested capital. It indicates how effective capital investment has been over one period.

$$\text{RoI} = \frac{\text{Gain from Investment} - \text{Cost of Investment}}{\text{Cost of Investment}} = \frac{\text{Profit}}{\text{Invested Capital}}$$

This formula is primarily applied for calculating corporate RoI, but is also applicable for corporate units and departments (Perridon & Steiner, 1999, p. 549). The advantages of the RoI lie in its ability to aggregate different business processes and consolidate them into one figure: Profit. Due to its unambiguous statement and its easy use, it is broadly utilised in practice (Hoffmann, 2002, p. 13). However, the DuPont-scheme – consisting exclusively of the RoI-analysis – does not capture performance in a holistic way and serves sufficiently well for management decision-making, due to its past orientation (Gleich, 1997, p. 114).

The concepts of EVA and CFRoI were mainly developed to pursue a value-oriented management approach, following the traditional shareholder value approach (Perridon & Steiner, 1999, p. 16; Weber & Schäffer, 2006, p. 173).

The **EVA** concept links corporate accounting data to its stock market performance. Shareholders are primarily interested in the maximisation of abnormal returns, which is the

excess return on what they expected to earn with an alternative investment option of the same systematic risk class. Therefore, EVA is defined as

$$EVA = NOPAT - (WACC * Net\ Assets)$$

NOPAT = Net Operating Profit After Taxes
WACC = Weighted Average Cost of Capital.

This formula is based on earnings and profit, like the RoI (Bacidore, Boquist, Milbourn, & Thakor, 1997, p. 15; Ferguson & Leistikow, 1998, p. 81). Although it could also be applied at a department level, the EVA concept appears too complex for daily use. In addition, EVA reflects a residual profit quantity (Karrer, 2006, p. 159). However, effectiveness is measured through profitability ratios and with the EVA approach only the numerator in the form of supply management savings could be defined precisely. Therefore, the EVA concept does not appear appropriate for the problem set.

The **CFRoI** model represents an alternative measurement approach. The conceptual approach of CFRoI and RoI are the same, in which return is achieved through the original investment. However, CFRoI reflects corporate value based on cash flow.

$$CFRoI = \frac{Cash\ Flow}{Invested\ Capital}$$

So what is preferable and more adequate: earnings or cash flow? In general, the consideration of cash flow in contrast to profit-related figures, leads to less room for manipulation in the context of balance sheet practices (Karrer, 2006, p. 161). Chan et al. (2006, p. 1046) stated that net income is a 'noisy measure of operating performance'. With respect to the timing and measurement of revenues and expenses, earnings allow more room for manipulation, in contrast to cash flows, which are less volatile. "Earnings remain as ultimate outcome measure" (Horngren, 2004, p. 209), which reduces the arguments in favour of cash flows. Dechow (1994, p. 35) presented the following counter-arguments in favour of earnings and their characteristics as a better reflection of corporate performance: Since realised cash flows have timing and matching problems, especially in volatile market environments, and hence do not function as a reliable information base over a finite time period, generally accepted accounting principles for shareholder and creditor protection have evolved to minimise the room for earnings manipulation by management. In addition to the conventions of objectivity and verifiability, the following two principles appear to be most significant:

- **Principle of Caution:** This principle tries to restrict a too optimistic evaluation of the corporate situation by management so as not to create an unrealistic corporate picture especially for shareholders and creditors (Lück & Henke, 2008, p. 201).

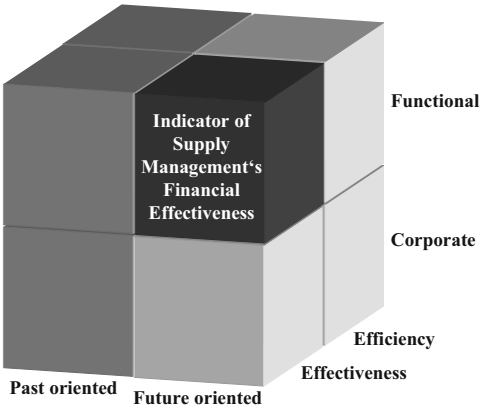
- **Principle of Continuity:** To obtain, as shareholder and creditor, a sound picture of the corporate situation, its financial development has to be traceable over several years. Thus, all financial statement items need to be comparable (Lück & Henke, 2008, pp. 208-209).

"There is no consensus in the investment industry as to the best measure of cash flow, so even if managers had the capability, it is not clear what they would manipulate" (Chan et al., 2006, p. 1047). Since supply management has a direct impact on the profit and loss account through the realisation of savings (Ellram & Liu, 2002, p. 31), measuring its effectiveness in terms of cash flow, on which it only has indirect impact over the terms of payment with suppliers, makes limited sense (Ellram & Liu, 2002, p. 37). Thus, supply management's financial effectiveness indicator ought to be based on earnings.

Return on Spend – Indicator of Supply Management's Financial Effectiveness

Having analysed established supply management effectiveness measures the introductory question can now be answered as follows:

In order to quantify supply management's bottom line impact, one can resort to the concept of already established profitability ratios; however, for the field of supply management, a new indicator has to be defined.



Based on Hoffmann, 2002, p. 12.

Figure 10: Measurement cube for the classification of financial performance measures – Status quo.

Figure 10 illustrates the status quo in contrast to the target: Current measures dispose of efficiency as well as effectiveness measures. This, however, could have been demonstrated within two dimensions, since all presented measures are past oriented and do not sufficiently support decision-making processes. Thus, the third dimension is introduced and with it, the following criteria for the new effectiveness indicator emerge:

- **Future-oriented** – For management decisions, past actions as well as future realistic scenarios need to find impact on the performance indicator (Gleich, 2001b, p. 22).
- **Comprehensive** – Value creation cannot be quantified comprehensively just on the basis of an outcome measure (Karrer, 2006, p. 151).
- **Integrative** – Supply management's corporate integration towards an equal business partner has to be supported (Trent & Monczka, 1998, p. 7).
- **Transparent** – A clearly defined measurement process minimises the possibility for dysfunctional behaviour (Neely et al., 1997, p. 1131) and provides the outcome causes for management purposes (Cooper & Kaplan, 1998, p. 110).
- **Comparable** – To benchmark effectiveness its measure needs to facilitate inter-corporate comparisons and present its performance objectively (Mol, 2003, p. 6).
- **Shareholder-oriented** – Due to changing information requirements and needs on capital markets, shareholders demand reliable and easy to understand information (Klingebiel, 2001, p. 395).

The new indicator, as the result of the previous discussion and adequate to fulfil the above criteria, is the so-called Return on Spend (RoS):

$$\textbf{Return on Spend} = \frac{\textbf{Supply Management Savings} - \textbf{Supply Management Cost}}{\textbf{Total Supply Management Spend}}$$

The RoS puts supply management's profit in the numerator in relation to its total turnover volume in the denominator. It shows the financial effectiveness of supply management's achievements by linking the realised savings to the simultaneously produced organisational costs and managed purchasing spend.

Total Supply Management Spend: This is supply management's total turnover and area of responsibility. It has to be purchased – ideally – exclusively by supply management and its volume and structure enables supply managers to realise savings. Therefore, total supply management spend is defined as

Total Supply Management Spend = Direct Spend + Indirect Spend – Unmanaged Spend

- **Direct spend** consisting of all the bought material, which directly contributes to corporate production,
- **Indirect spend** consisting of all company-wide bought material, which is needed for the maintenance of corporate activity; however, is not direct part of corporate production, and
- **Unmanaged spend** consisting of all the material, regardless if indirect or direct, which is not purchased by supply management, but by the budget owner himself,

e.g. Maverick Buying (the proportion of unmanaged spend has hence to be gradually minimised).

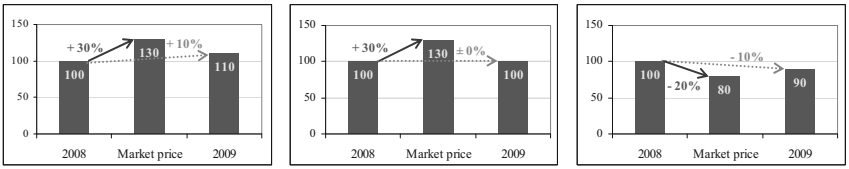
Supply Management Costs: Since the management of supply will be coordinated mostly within sourcing teams, the organisational costs of the sourcing team members have to be considered correspondingly and proportionately. Since cost calculation approaches and concepts are already well-established (e.g. Horváth, 2003), the research focus of this thesis will not be laid upon this part of the numerator.

Supply Management Savings: In contrast to organisational costs, there is no unanimous and reliable definition of supply management savings, especially after purchasing's strategic re-orientation and defining the coordination of cross-functional sourcing teams as one of supply management's critical success factors.

Therefore, supply management savings require analysis, refinement, and a new measurement process. This will be the focus within the remaining part of this thesis.

NECESSARY RE-DEFINITION OF SUPPLY MANAGEMENT'S SAVINGS – BUDGET EFFECTS

Traditional price savings, in the case of re-purchases, are defined as the difference between the previous and present price (Wagner & Weber, 2007, p. 20). Figure 11 presents three cases, which show that this traditional savings definition is no longer sufficient for capturing supply management's refined understanding. All three cases start with the product price of 100 monetary units. The blue solid line indicates the percentage change relative to the market price; the orange dotted line indicates the percentage change relative to the new price.



a) Market increase > Price increase **b) Market increase; no price increase** **c) Market decrease > Price decrease**

Figure 11: Different scenarios for challenging the traditional savings definition.

- In case a), traditional price savings would be negative, due to a 10% price increase. However, that supply managers were able to limit the market price increase of 30% is not considered → Underestimated performance.
- In case b), there would not be any price savings noticeable following the traditional savings calculation. However, the avoided 30% market price increase is again not considered → Underestimated performance.

- In case c), the market price decreased by 20%. However, supply managers were only able to achieve a 10% decrease. Additionally, it cannot be indicated if these savings are based on supply managers' achievements, or a consequence of the market price development → Overestimated performance.

These examples support Hayes' and Renard's (1964, p. 47) statement that savings measurement may not only be based on the amount saved, but also on the relation of the amount saved to the target figure, which includes so-called cost avoidance. With traditional price savings, it is neither possible to capture supply managers' achievements comprehendsively, nor to tell if they are based on personal effort. Continuing this traditional savings measurement approach, all price reductions are added and the sum at the end of the business year indicates supply management's savings. But can this really be supply management's entire value contribution? CPOs do not rely on it, since the measure is not comparable due to intransparent measurement standards (Fearon & Bales, 1997, p. 77).

→ Current supply management savings definitions are neither comprehensive nor reliable.

"Price is only one of the costs affected and changed, when purchasing activities are handled differently. A number of indirect costs are also affected" (Gadde & Håkansson, 1994, p. 30). Currently, supply management's achievements are measured in terms of price effects primarily based on direct material (Smeltzer & Siferd, 1998, p. 39) – material cost reduction. However, through supply management activities, such as profound supplier collaboration, monetary effects in terms of administrative costs, production costs and material flow-related costs can be obtained as well (Gadde & Håkansson, 1994, p. 31). Total monetary effects achieved through supply management's activities have to be perceived from the costs of sales perspective: Supply management is able to achieve material as well as process cost reductions in the form of overhead reduction and process optimisation. These, however, can no longer be measured in terms of traditional price comparisons. Therefore, the modified value contribution definition has overall process cost rather than price as the driving factor in the denominator.

→ Defining savings as price reductions only captures material but not process cost effects.

Total cost effects, as sum of material and process cost effects, appear to be an adequate measurement object for supply management's monetary achievements. The traditional savings definition has been improved since total cost effects capture supply management's achievements comprehensively. However, the deficiencies regarding the lack of future orientation, objectivity and comparability in the measurement context have thereby not been considered explicitly yet. Total costs ought to be holistically explored and planned during the corporate budgeting process. Francesco Villa (1857, p. 67) defined budget as an estimate that concretises, ahead of the particular business year, capital movements, revenues and expenditures, and eventually the result of all corporate activities. Budgets consider material as

well as process costs and are institutionalised as the final interface to planning, and as a plan which sets out corporate financial targets that are outlined at the end of the business year within the external financial reporting system (Horváth, 2003, pp. 230-231). They are comprehensive, future-oriented, comparable, and a corporate institution – thus ideal as an accepted objectifying measurement framework for supply management's total cost effects. If supply management's monetary value contribution is proven in form of budget effects (Figure 12) – defined through a lower level of capital required than originally budgeted achieved through the effects of supply management's planned activities – the doubts regarding supply management's financial effectiveness can be minimised. Several authors, who claim that supply management's achievements directly influence budgets and the corporate bottom line (Ellram & Liu, 2002; Hayes & Renard, 1964; Jahns & Henke, 2007), support this conclusion. In addition, Atkinson et al. (1997, pp. 25-26) explained that most companies design their performance measurement system as an extension of their financial reporting system, since it provides the basis for reliable, consistent, and comparable statements on performance.

→ Since supply management directly affects budgets, it is plausible to express supply management savings in terms of newly-defined budget effects.

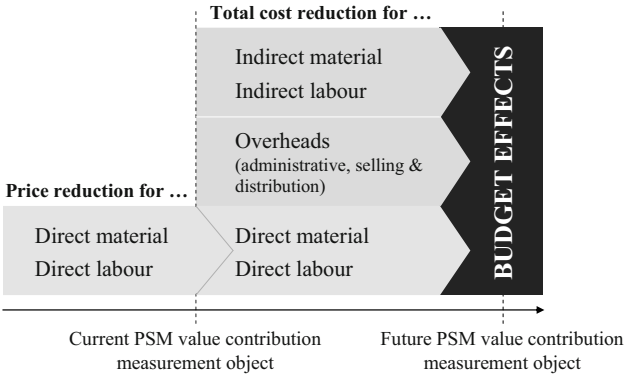


Figure 12: Development towards budget effects as future value contribution measurement object.

Having defined Return on Spend as supply management's financial effectiveness indicator and argued that for the calculation of its numerator, budget effects rather than traditional savings are necessary, the overall research question for this thesis is refined:

HOW CAN SUPPLY MANAGEMENT BE INTEGRATED IN THE BUDGETING PROCESS TO SHOW ITS BUDGET EFFECTS RELIABLY?

The calculation of budget effects requires supply management's involvement in budgeting matters and hence a remodelled and innovative savings measurement process.

2.2.3 Supply Management's Budget Effects as Refined Savings and Basis for Financial Effectiveness Measurement – An Integrated Budgeting Approach

BUDGETING – AN ANTIQUATED PLANNING PROCESS?

Budgets support the business to realise strategies and operating activity plans successfully. Budgeting, a process of assignment, control and adjustment, fixes target results for the single corporate responsible and controls their realisation. It offers a structured approach and process, in which single actions are evaluated monetarily and made accessible to a company-wide coordination. Budgets create but also limit room for activity for the single corporate budget owners to guarantee corporate productivity as well as profitability. They indicate how much a budget owner may spend during one business year to fulfil his corporate tasks and stimulate entrepreneurial behaviour, since the budget owner has to decide how he manages his resources efficiently (Greiner, 2006a, pp. 12-13; Horváth, Dambrowski, & Hennig, 1986, p. 6; Preißner, 2003, p. 7). Despite the fact that most companies use budgets as frameworks for strategic direction and operational control (Grahame, 2007, p. 48), one question has been present for some time: "Should organizations [!] retain, improve, or abandon their budgeting process?" (Hansen, Otley, & Van der Stede, 2003, p. 97).

Budgeting is time-consuming and does not reflect corporate reality, since it is neither linked to corporate vision and strategy, nor considers environments, changing priorities or management action plans (Connolly & Ashworth, 1994, p. 32; Greiner, 2006a, p. 17; Pfohl & Stölzle, 1997, p. 137). Budgeting is a non-reflected continuance of last year's budget values, which reflects its myopic and fix, rather than flexible character (Grahame, 2007, p. 48). Since budgeting meanwhile negatively affects entrepreneurial spirit, motivation, and efforts of budget holders and fosters political behaviour (Brimson & Fraser, 1991, p. 32; Durfee, 2006, p. 28), it often only adds little value (Bunce & Fraser, 1997, p. 26; Neely, Bourne, & Adams, 2003, p. 23). The main functions of budgeting are prediction, coordination, and motivation (Weber & Linder, 2003, p. 9), and since all three factors were not optimally realised through traditional budgeting in the increasingly dynamic markets, alternative approaches have been developed (Figure 13).

(1) Better Budgeting reflects minor but basic changes such as improved IT-support and employee training, data harmonisation, and reduced degree of budget details (Gleich, Greiner, & Hofmann, 2006, pp. 28-29).

(2) Beyond Budgeting eliminates budgeting and establishes an internal market, where managers claim the resources they need to accomplish their tasks, based on the principles of radical decentralisation and adaptable management processes. This approach of empowerment sets the basis for corporate high performance (Becker, 2004, p. 83; Hope & Fraser, 2003, p. 111; Weber & Linder, 2003, pp. 21-24). Since beyond budgeting involves great reorganisa-

tion and is not yet entirely technically mature, there are few companies that have abandoned budgeting (Hope & Fraser, 1999, p. 17; Neely et al., 2003, p. 25).

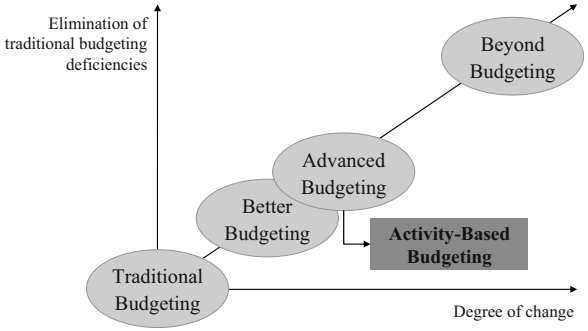


Figure 13: Classification of the different budgeting approaches.

Thus, it appears more reasonable in the current dynamic market environment to follow an advanced budgeting process (Greiner, 2006b, p. 42) for measuring budget effects. An increased enhancement of interdepartmental communication to coordinate efforts and attain operating and strategic goals would contribute the most to the advancement of the budgeting process. If budgets are created in such a way that all affected parties are involved in the planning process, and budgets with their basic assumptions become transparent, they will function as key for communicating information within intra- and inter-corporate relationships (Ginnerup, Broeng Jørgensen, Møller Jacobsen, & Refslund, 2007, p. 89; Greenberg & Greenberg, 2006, pp. 41-42). Thus, budgets remain essential; however, alternative budgeting approaches are required (Durfee, 2006, p. 28).

(3) Advanced Budgeting aims at increased budget efficiency and effectiveness through output-oriented planning, integrated performance measurement, and self-adjusting goals. It tries to add flexibility and diminish efforts through increased market orientation (Weber & Schäffer, 2006, p. 273). While coordination through budgets will be maintained, detailed budgets will only be created for success-critical processes, and the budgeting process decentralised and less bureaucratic. Instead of last year's continuance – founding budgets on past assumptions – budget baselines will be newly defined for each budgeting process. Furthermore, budgets will be linked to corporate strategy and leave their myopic one-year perspective through rolling forecasts on a continuous level. To reduce dysfunctional behaviour, meeting the budget will be disconnected from salary and wages, and self-control preferred to centralised budget controls (Gleich et al., 2006, pp. 29-31; Preißner, 2003, p. 120; Weber & Linder, 2003, pp. 14-15; Weber & Schäffer, 2006, p. 273).

An advanced budgeting approach will hence function as a reference framework for measuring supply management's budget effects.

Activity-Based Budgeting as a Measurement-Adequate Budgeting Process

For measuring supply management's budget effects with its total cost focus, the output-oriented approaches of planning and budgeting come to the forefront. Traditional budgeting plans are input-oriented. They start with the available input resources and determine, based on past budgets and under general assumptions, the budgets for the subsequent period. Modern systems, however, focus on the required output and customer demands. Based on corporate programmes, strategies, and market and customer needs, corporate capacities are planned (Gleich et al., 2006, p. 26; Pfohl & Stölzle, 1997, p. 139). Necessary resources have to be sourced as economically and target-oriented as possible, providing the opportunity to prove supply management's effectiveness potential.

In this context, Cooper and Kaplan (1998) presented activity-based budgeting (ABB), which can be broadly described as activity-based costing reversed. Activity-based costing has three objectives: report accurate costs, identify costs of activity and the third one, not widely acknowledged yet, is to identify the need for future resources to acquire them more efficiently. This is where ABB starts (Cooper & Slagmulder, 2000a, p. 85).

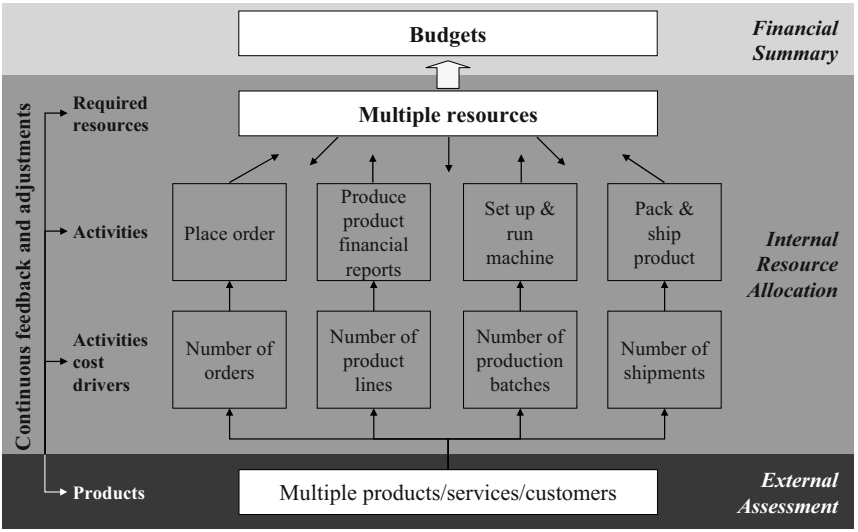
The concept behind ABB is to develop an activity model of resource requirements. ABB identifies costs from products, transfers them to activities and resources, and links operational performance with financial results (Horngren, 2004, p. 210). ABB reclassifies indirect costs as direct costs, since it attributes resources directly to activities which are necessary to accomplish the product. In Figure 14, the steps of the ABB-process are illustrated (Brimson & Antos, 1999; Connolly & Ashworth, 1994; Cooper & Kaplan, 1998; Hansen et al., 2003; Kaplan & Cooper, 1998):

Step 1: 'Estimate the production and sales volumes for the next periods'

Aligned with the corporate vision and targeted customer portfolio, estimation of the production and sales volumes includes the individual products and services to be sold. In addition, details of the production and sales ordering processes are considered.

Step 2: 'Forecast the demand for organisational activities'

The required organisational workload to satisfy the demand is planned. This process forecasts the demand for all primary and secondary activities as well as project- and sub-activities – so-called activity budgets are formed. All activities that drive costs in the production of the forecasted volumes are considered in their particular quantities.



Based on Connolly & Ashworth, 1994, p. 33; Hansen et al., 2003, p. 100; Kaplan & Cooper, 1998, p. 304.

Figure 14: Activity-based budgeting process.

Step 3: 'Calculate the resource demands'

After concretising the activities with their required demand, the necessary resources for meeting this demand are estimated. This planning step is based on the estimated efficiency of performing activities and applied resources.

Step 4: 'Determine the actual resource supply'

The demand for the resources, previously calculated on the single activity level, is aggregated and the actual quantity of resources, which has to be supplied to realise the volumes, determined. Thereby, the future is modelled and fungible resources are considered to achieve the maximum degree of resource efficiency.

Step 5: 'Determine activity capacity'

The capacity of the activity is determined to guarantee efficient resource usage and limit the deviation from forecasted and supplied resources. Focusing on capacity-critical resource elements, production schedules are continuously adapted and already allocated resources, activities, and performance levels re-assessed ('Closed Loop Model').

Step 6: 'Transfer the results into the financial context'

Finally, an overall summary of the financial impact is constructed, which captures the effect of the resource decisions taken on the income statement, cash flow statement, and balance

sheet. If the financial result does not meet management's requirements, the previous steps have to be re-assessed.

The key to successful ABB is the understanding, reflection, and continuous adjustment of the linkages and the natural flow between demanded activities and resources, as the basis for a good understanding of cost behaviour. Since the model focuses on cause-effect relationships, identifies leading and lagging measures, and is open, fair, and highly participative, it is preferred by managers who constantly try to enhance their budgets (Connolly & Ashworth, 1994, p. 36; Horngren, 2004, p. 210). The main difference between ABB and traditional budgeting is its increased degree of budget accuracy (Cooper & Slagmulder, 2000a, p. 85). Since the organisation has to consider more specifics and details than with traditional accounting, the process is more intense – an argument often used as a disadvantage of the approach (Neely et al., 2003, p. 24). However, if the analyses are accomplished successfully, resource supply will be matched efficiently to future demand and the amount of unused capacity will be minimised (Cooper & Kaplan, 1998, p. 117).

The budget is deducted from activities and resources, and highlights inefficiencies and bottlenecks, in contrast to traditional budgeting. If the budget does not fulfil management requirements, not only the quantity but also resource capacity, resource consumption rates or activity consumption rates can be adjusted. Advanced and focused decision-making is the consequence, since employees are responsible and accountable for the management of their particular activities to achieve performance and efficiency targets (Brimson & Antos, 1999, p. 12). Since all organisational levels contribute their technical knowledge, several levers for optimising resource allocation are available in the early planning stage. Through this horizontal approach, ABB fosters cross-functional collaboration, integrates strategy with operations, enhances top-down and bottom-up communication, and fosters, through continuous improvement analyses, management's entrepreneurial commitment (Connolly & Ashworth, 1994, pp. 32-33, Hansen et al., 2003, pp. 99-100). The transparency obtained through ABB hence not only leads to an optimisation of direct material supply but also to process optimisation, which fosters the improvement of the direct as well as indirect cost situation.

Supply Management's Role Within ABB

The most decisive step of output-oriented budgeting is an accurate sales and production plan (Kaplan, 2006, p. 4). However, the critical step is internal resource allocation. If the assumptions on resource requirements and efficiency are erroneous, the apparently high degree of budget accuracy becomes useless (Cooper & Slagmulder, 2000b, pp. 26-27). Therefore, the knowledge input into the budgeting process has to be efficient, but also comprehensive in the form of cross-functional expert knowledge, since the most cost-

beneficial changes can only be incorporated into a budget through interdepartmental dialogue (Brimson & Fraser, 1991, p. 32; Connolly & Ashworth, 1994, p. 37). However, the integration and availability of expert knowledge and information during the budgeting process has been the critical point of the ABB approach (Hansen et al., 2003, p. 101).

Considering the fact that the majority of activities necessary to meet the estimated sales and production volumes depend on supply management – since it is meanwhile responsible for more than 50% of the total turnover volume (Enderby, 1998, p. 43; Henke, 2009, p. 33), supply management has advanced to the most important information and knowledge provider. This fact combined with the above issue of expert knowledge integration leads to the conclusion that supply management should be established as an integrated partner in the ABB process.

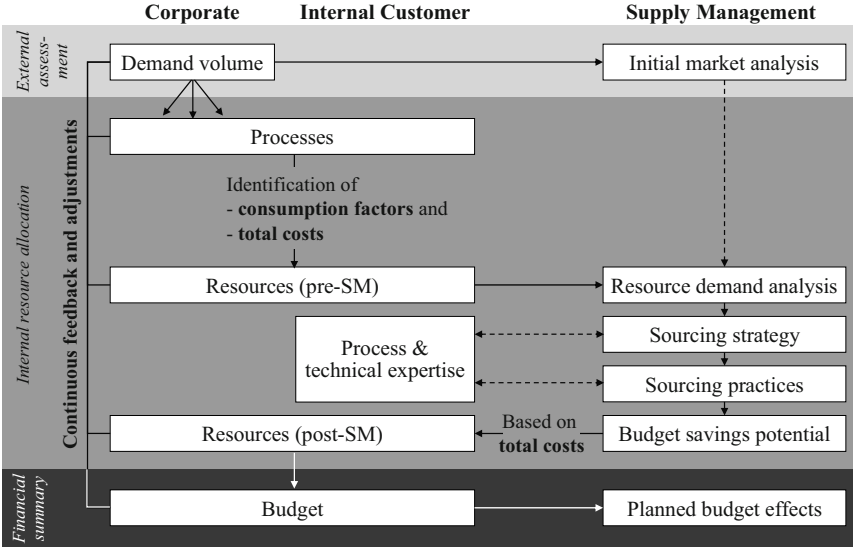


Figure 15: Modified budgeting process with supply management's involvement.

Figure 15 illustrates an advanced budgeting process regarding budget and resource transparency, adapted from the ABB-concept. The output-orientation remains unchanged: it starts with an external assessment, followed by internal resource allocation, which eventually results in a financial summary. The involved parties are specified as follows: Corporate represents top management and operations finance in the function as budgeting process owners. The internal customer is the budget owner and expert regarding demand and technical know-how. Supply management (SM), as third budgeting party, functions as supply expert and cost challenger delivering information on supply market developments and purchasing prices.

Step 1: The sales and production volume is estimated on a corporate level.
Supply Management's Integration: To achieve economical resources, to act flexibly on the supply market, and to provide the budgeting partners with real-time prices during the budgeting process, supply management needs to obtain the demand information as soon as possible. If supply management is involved early in planning, it can accomplish comprehensive internal as well as external market analyses and elaborate, based on the first demand estimations, price and resource developments.

Step 2: Concrete activities, necessary for meeting the predicted demand, are defined on a corporate level in cooperation with the internal customer as technical expert. In contrast to Bleeker (2001), who integrates the cost aspect in the last step only, this ABB approach calls for an integrated activity-based costing process[1], which analyses the cost structure and drivers of each activity on a permanent basis. Efficient budgets can only be created if both driving factors – quantities and prices – are optimised from the beginning, integrating the corresponding experts early on: internal customer and supply management.
SM Integration: Supply management conducts market analyses based on continuously updated demand information.

Step 3: Identification of the resources that are necessary to accomplish the activities.
SM Integration: The supply manager responsible for the resource or category will obtain the concrete demand on a category-level. Based on prior general market analysis, which only provided an approximate demand magnitude for the particular required category, the demand and supply market analysis will be more profound and specific. Collaboration with the responsible internal customer is established to obtain the most recent expertise on technical specifications. Based on this and the market analyses, the supply manager develops category-specific sourcing strategies and operationalises them through concrete sourcing practices, such as negotiation and bundling initiatives. These traditional purchasing activities will mostly lead to direct price reductions. In addition, due to his technical expertise, it is the supply manager's task and competence to inform the internal customer about current market developments and innovations regarding the specific resource. Consequently, process optimisations, such as standardisation, substitution, and outsourcing, triggered through supply management's know-how, enhance total cost reductions from a process perspective. To exploit supply management's total cost reduction potential, all process cost drivers concerning the particular category have to be known beforehand.

[1] An activity-based costing system traces resource expenses to activities and activity costs to objects through activity-cost drivers. It reclassifies most indirect costs as direct costs (Kaplan & Cooper, 1998, p. 84).

Modified Step 4: Adjustment of the resource plan based on supply management's planned budget effects.

SM Integration: Supply management, as the initiator of this step, has to concretise the process cost reduction potential in monetary terms, based on its previously defined sourcing practices, in order to obtain budget effects. This approach opens the possibility of evaluating operating as well as strategic achievements of supply management, as demanded through the previously modified definition of supply management's value contribution. Monetary effects will include activity cost reductions as well as cost avoidance and additional benefits. These planned and risk-evaluated savings potentials, which appear realistic to be achieved in the following business year, are communicated to the budgeting partners for them to adjust their so far designed financial resource plans, regarded as the expected budget, which do not yet include any supply management effect.

Step 5: Definition of the official budget for the following business year after the deduction of all potential, but realistic monetary budget effects. As a result of the adjustment process in Step 4, an efficient capital allocation can be assumed.

SM Integration: If budgets are adjusted as a result of supply management's planned achievements, this will reflect the first part of supply management's bottom line impact.

In addition to planned budget effects, on-top budget effects, which could not be forecasted, can be realised during the business year. Supply management's total budget effects or bottom line impact can be defined as the sum of planned and on-top budget effects.

The expected budget is the measurement baseline. Therefore, it becomes possible through the budget comparisons – in contrast to the statement of Wagner and Weber (2007, pp. 23-24) – to show cost avoidance as part of supply management's bottom line impact, since the expected budget reflects the budget that would have been necessary to spend if supply management had not performed.

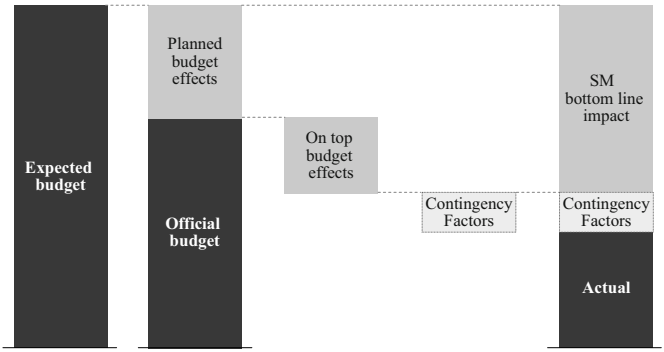


Figure 16: Definition of supply management's bottom line impact.

Figure 16 illustrates the measurement logic in a very general manner, since contingency factors, such as unpredictable environmental, social, or economic incidents, will have a great impact on the final actual – an issue to be treated in detail in 4.3.2. This measurement approach also introduces a different mindset towards on-top effects. In traditional budgeting, on-top effects had to be maximised to show supply management's performance, since planned budget effects had not been noted. With this new approach, however, which pursues through accurate budgets efficient capital allocation, high on-top budget effects reflect bad planning quality.

After having introduced supply management's budget effects (BEs) as a new and necessary alternative to the traditional savings, the formula for measuring supply management's financial effectiveness can be adapted as follows:

$$\text{Return on Spend} = \frac{\text{(Planned BE + On–Top BE} \pm \text{Contingenc y Factors)} - \text{Supply Management Cost}}{\text{Total Supply Management Spend}}$$

If supply management's savings are calculated in budgetary terms, the RoS complies with the relevant characteristics of a useful financial performance indicator:

- **Future-oriented** – Future scenarios are considered in the budgeting process.
- **Comprehensive** – Total cost reductions include operating and strategic achievements.
- **Integrative** – Supply management is integrated as expert in the budgeting process.
- **Transparent** – Budgeting is clearly defined through roles and responsibilities.
- **Comparable** – Budgets as corporate instrument are defined globally in monetary units.
- **Shareholder-oriented** – Supply management's budget impact is for direct reading.
- **Unambiguous** – Objectivity is increased due to several involved budgeting parties.

Through the integration of supply management's bottom line impact measurement in the institutionalised budgeting process, the uncertainty, which evolves from this new savings measurement approach and indicator, will be diminished. Since the new measurement process becomes an integral part of an established financial reporting process, in which certain monitoring forces are already established due to the political behaviour of the budgeting partners, it is made transparent from the beginning and leads to the avoidance of additional monitoring costs. Since the RoS-calculation process is based on constructive collaboration between supply management, internal customers, and finance, it expresses the effects of managing supply in general rather than the isolated performance of the purchasing function. This cross-functional perspective and understanding of the RoS will eventually grant supply management the status of an equally considered business partner and enable it to define its financial corporate value contribution.

2.3 Design Implications for Measuring Supply Management's Budget Effects

Measurement requirements, objectives, challenges, existing deficiencies, and future chances – in short, all the issues, which have been presented in the previous chapters and have an influence on an effectiveness measurement system that claims to be innovative and respondent to current measurement shortcomings and demands – will be processed in the context of this chapter. The outcome will be an initial process draft for supply management's financial effectiveness measurement. Supply management's budgeting integration was identified to be the prerequisite for measuring supply management's budget effects as a refined problem for the remaining part of the thesis. Therefore, the design of the measurement process will centre on this newly required integration in 2.3.1. Besides process-related implications, organisational implications are also expected and hence discussed in 2.3.2. The planned approach is likely to require change not only within the corporately established budgeting process concerning the integration of a new process player, but also on the side of the players. Finance and internal customers need to respect and call for supply management's integration and supply management itself needs to realise its proactive role within the planning process. To conduct empirical research that allows and supports the further exploration of the process-related and organisational implications, a design science approach is outlined and applied to the research question in 2.3.3.

2.3.1 Process-Related Implications – A First Draft of an Integrated Budget Effects Measurement Process

Through integration in a process-based budgeting procedure, supply management becomes able to identify savings and optimisation potential regarding material as well as process costs and can demonstrate its value contribution in a holistic and corporately accepted way in the form of budget effects. Since it is of major interest, how supply management can measure these budget effects, a first draft of an RoS measurement approach (Figure 17) was developed. This initial version outlines the basic steps and prerequisites that have to be fulfilled by supply management to guarantee sound results for the RoS.

The measurement approach is divided into three essential, interlinked parts: (I) Actual Measurement Process, (II) Corporate Alignment, and (III) Commitment. The latter is discussed in 2.3.2 as it represents a human factor. For each part, construction principles are formulated based on knowledge obtained from literature analysis and agency theory.

(I) ACTUAL MEASUREMENT PROCESS

Based on Carr and Pearson (2002, p. 1033), who define strategic purchasing as "the process of planning, evaluating, implementing, and controlling", the measurement process is divided

into two subsequent phases: planning and realisation. Monitoring in parallel is concerned with the establishment of measurement transparency and objectivity.

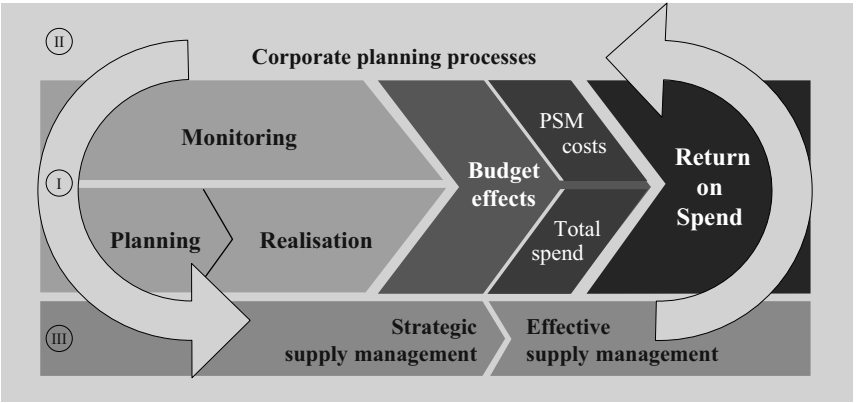


Figure 17: First draft of an integrated RoS measurement approach.

Planning: Supply management needs to be an expert on supply markets and their development by conducting accurate forecasts and developing supply strategies to identify and exploit future cost reduction potential, and to contribute effectively to the budgeting process. Forecasts, which predict future developments mostly based on market research, serve as one basis for strategic planning, which is concerned with the question of how to act to meet future objectives and expectations (Ellram & Birou, 1995, pp. 37-38). Supply management's budgeting integration only creates value, when the function is able to identify, on a well-founded basis, cost reduction potential that will be realised during the coming business year. Since budgets will be adjusted based on supply management's plans and evaluations, they have to be generated in a sound way. Otherwise, supply management will lose rather than gain reputation and confidence. Therefore, transparent communication and information channels have to be established with the internal customers and the finance department on the corporate level (Figure 18).

Supply management first needs to obtain information from the corporate side about end customer demands and savings guidelines. Based on this, supply management conducts market analyses and receives information on commodity price development from the supply market side. The information exchange with suppliers is the most essential part (KPMG International, 2008, p. 6). Supply managers obtain recent information on purchasing prices, supply shortages, and innovative technology. In return, selected suppliers will be integrated in form of long-term relationships and be treated as premium business partners. With this information, supply managers are enabled to conduct benchmarking and scenario analyses to

reach efficient supply conditions. In connection with the process analyses, these corporate and environmental analyses eventually result in supply and commodity strategies operationalised through certain supply activities that are expected to lead to concrete cost reductions.

Figure 18: Communication and information channels between supply management and its environment.

These results are communicated back in the last step to the internal customer and the finance department on a corporate level to provide them with solid budget reduction potential. This trilateral relationship is also called the 'supply link'. It consists of the relationships between supply management, internal customers, and suppliers, and can guarantee more efficient resource allocation in the planning period (Kumar, Ozdamar, & Ng, 2005, pp. 154-155; Luo, Slotegraaf, & Pan, 2006, p. 67). Carter, Monczka, and Mosconi (2005, p. 18) state that all measurement-relevant information can only be considered and lead to reliable and complete results when all affected corporate functions have exchanged and discussed strategic information in cross-functional teams (Murray, 2001, p. 405; Narasimhan & Das, 2001, p. 596; Van Weele & Rozemeijer, 1996, p. 159). Since the supply chain consists of different actors that have diverging interests, cross-functional teams are expected to lead to transparent and open discussions and to decrease information asymmetries during the planning period (Aramyan et al., 2007, p. 304). These integrated business processes draw customers as well as suppliers into the value creation process (Vickery, Jayaram, Droge, & Calantone, 2003, p. 523) and support the movement towards cross-disciplinary supply management. Supply management's proactive participation in corporate planning processes thereby forms the first step towards its internal recognition, since it becomes visible on a corporate level in daily business and aligns its functional strategy with corporate strategy and goals (Das & Narasimhan, 2000, p. 18; David et al., 1999, p. 23; Murray, 2001, p. 405; Tan, Kannan, Handfield, & Ghosh, 1999, p. 1047). This so-called "co-alignment" (Day & Lichtenstein,

2006, p. 317) enhances cross-functional transparency and confidence – reducing the outlined agency problem – and is demanded as a basic supply management step by several authors (e.g. Carr & Smeltzer, 2000; D'Avanzo, Von Lewinski, & Van Wassenhove, 2003; Narasimhan & Das, 2001).

Realisation: The key to performance measurement in general is actual-plan-comparisons (Gleich, 2001b, p. 23; Schäffer & Willauer, 2002, p. 76). The budget effect approach is based on the comparison of three different spend volumes: expected budget, official budget, and actual spend volume. To compare all three of them properly, they have to be based on the same assumptions and prerequisites. Therefore, the planned supply management activities, which are supposed to result in certain budget effects, have to be realised in a traceable way. To avoid the occurrence of the moral hazard problem – i.e. supply management benefits from exogenous, non-purchasing-related effects – and to exclusively but completely record all supply management achievements, the realisation of the particular planned budget effect should be directly linked to the corresponding activity (Ellram, Zsidisin, Siferd, & Stanly, 2002, p. 14). Since the measurement approach consists of several steps, not only comprehensiveness and comparability have to be guaranteed but also consistency, a lack of which is frequently criticised in the context of performance measurement systems (Beamon, 1999, p. 276; Fearon & Bales, 1997, p. 79; Holmberg, 2000, p. 852). Via this realisation step, an aligned measurement system could be achieved and the calculation of the outcome measure performed and traced accurately.

Monitoring: According to Gleich (2002), a control instance becomes necessary to assign achieved budget effects in a calculative sound manner directly to realised supply activities. This instance should be implemented to monitor the target focus, guarantee the validity of the measured results, control the correct assignment procedure of activities and cost reduction, and provide management with an insight into the operationalisation of planned strategies. It has to monitor the realisation of the activities during the business year to coordinate unexpected business challenges flexibly, introduce corrective actions, if required, and pursue proactive, rather than reactive decision-making (Gleich & Temmel, 2007, p. 25; Morgan, 2004, p. 526). Current measurement frameworks are criticised as being too static, i.e. they are not easily applicable to dynamic environments. An optimised measurement concept needs to equip employees continuously with information that can be directly applied in the context of decision-making in the supply chain (Gleich, 2002, p. 57; Holmberg, 2000, pp. 851-852; Shepherd & Günter, 2006, p. 253). Furthermore, a functioning monitoring process is responsible for the continuous presence of the internal fit, as the focus towards one common goal – the realisation of the planned budget effects – has to be steadily maintained (Gleich & Temmel, 2007, p. 29; Holmberg, 2000, p. 850). Standardised monitoring and reporting processes must be established – in parallel with the planning and realisation phase – that deliver status quo

information and variance analyses systematically during the year and are expected to establish via several feedback- and feedforward-loops (Grüning, 2002, p. 8) continuous process improvement and transparency (Gunasekaran, Patel, & McGaughey, 2004, p. 344; Morgan, 2004, p. 533).

Construction Principle I 'Actual Measurement Process': For transparent budget effects, supply management needs to integrate proactively as strategic expert in the budgeting process, realise its planned strategy in a stringent manner, and install a monitoring instance to provide transparency during the planning phase and the adjacent realisation of the budget effects.

(II) CORPORATE ALIGNMENT

All performance measures must be directed towards one common goal (Carter et al., 2005, p. 9) – the realisation of the corporate strategy. Holmberg (2000), and Chan and Qi (2003) analysed performance measurement from the systemic angle. The major problem, which Holmberg (2000, p. 850) identified, is fragmentation, i.e. communication channels, cross-functional information exchange and integration are not fully accomplished: "Organizations [!] must be integrated, not simply interfaced". Measurement is all about relationships, between functions, measures and drivers, and target and actual figures (Holmberg, 2000, p. 860). Chan and Qi (2003, p. 181) claim that supply performance measurement should go beyond organisational and functional boundaries and by doing so redefine and substantiate supply management within the organisation. Since the act of purchasing is cross-functional in nature, the RoS approach cannot be an isolated system. It has to share input with others systems and reach for the strategic fit as several authors claim (Beamon, 1999, p. 276; Bititci et al., 1997, p. 526; Day & Lichtenstein, 2006, p. 317; De Toni & Tonchia, 2001, p. 57).

The lack of connection between strategy and measurement is a major measurement issue. Since measurements are derived neither from corporate nor functional strategies, they lack a solid and transparent measurement base. Hence, the original objective of performance measurement – monitoring strategy implementation – cannot be met (Chan & Qi, 2003, p. 180; Wickramatillake et al., 2007, p. 58). The RoS concept can only fulfil its mission if the measurement process is oriented at the corporate level. Only if supply management's performance is aligned with the corporately determined strategic and operating goals, can supply management's resulting performance be regarded as corporate contribution and a driver of competitive advantage (Reck & Long, 1988, p. 3). Otherwise, it would only be functional performance, not interpretable in the corporate context (González-Benito, 2007, p. 902). To facilitate this alignment, supply management needs to participate in the planning and decision-making processes, align its practices in a structured way, and be involved in continuous improvement cycles (Narasimhan & Das, 2001, p. 594).

Construction Principle II 'Corporate Alignment': For corporately accepted and recognised measurement results, supply management's performance always needs to be aligned with the corporate setting and goals.

2.3.2 Organisational Implications – The Consideration of Soft Factors Within the Context of Change

(III) COMMITMENT

Bourne et al. (2002, p. 1289) highlighted that success or failure of a measurement system depends on three factors – 'purpose', 'structure', and 'culture' – and hence mainly on environment settings. So far, purpose and structure have been highlighted; however, culture, which will also be affected through the demanded change, is expected to play a vital role regarding the success of the proposed effectiveness measurement concept.

The theory, which has been developed on measuring supply management's financial effectiveness, does not involve the definition of a new financial indicator based on already established organisational processes and structures. It claims the redefinition, or at least modification, of already established measurement practices and demands a change in mindset from supply managers but also internal customers and finance. Four major factors can be assumed to play a critical role regarding cultural impact and commitment:

Motivation: In a survey, KPMG International (2008, p. 9) found that supply management has made progress in raising its skills and reputation, but still needs to do more to gain influence and equal recognition. Perceived lack of motivation and interest in corporate concerns currently frequently prevents supply management from being accepted. Supply managers aspire to the status of equally recognised business partners (Cavinato, 1999, p. 80) and see themselves as on the best way towards this goal, since they continuously broaden their scope of competences and skills (Paulraj et al., 2006, p. 117). They tend to be increasingly indispensable, with their responsibility for more than half of the total costs incurred in a company (Gadde & Håkansson, 1994, p. 27). However, purchasers will not reach their goal if they do not change their attitude. Having great responsibility does not appear to be enough since its effects are expected to be transparent and provable. Purchasing has to realise this shortcoming, otherwise, it will continue to struggle for equal recognition and remain viewed as little more than a purchasing clerk who fights for price reductions in daily supplier negotiations, which cannot be identified at the bottom line. First, there needs to be an intrinsic trigger within supply management that makes the function want to demonstrate its true value contribution. Second, supply management needs to be willing to undergo change and further corporate integration and alignment. Only through this motivation, can purchasing act proactively and prove its entire potential for becoming an equal business partner on a sustainable basis.

Refinement of Supply Management's Corporate Role: Before being able to integrate fully in cross-functional teams and contribute to budgeting, supply managers need to become aware of their emerging responsibility. The key decision issue is purchasing's transition from individual responsibility to the team approach (Pearson, 1999, p. 68). Purchasers need to be willing and prepared to leave their operating role as commodity buyer and become entrepreneurially thinking supply managers. This change is a long-term process, but its necessity has to be conveyed in a sustainable way in order to achieve intrinsic motivation for change. Purchasers may not simply be told to behave and act differently, without having had the reasons stated comprehensibly. If this were the case, purchasers would change their behavioural patterns following the requirements of the newly introduced performance measures to meet their targets (Neely et al., 1997, p. 1132). The intended RoS affect, however, to emancipate supply management and prove its corporate value contribution could not be achieved effectively.

Modified Budgeting Approach: Based on Perridon and Steiner (1999, p. 597), the introduction or modification of budgeting as a management instrument requires a thorough analysis of the affected organisation beforehand. Assuming, in the extreme case, that the company operates through command and control budgets, the change to an integrative budgeting approach, as proposed, will lead to major changes in the so far established role model of the individual budgeting involved parties. In the first case, employees' targets are managed in an authoritative, top-down manner, whereas the second case requires employees to become active and creative and makes them think in an entrepreneurial way. This new participative budgeting approach requires a precise and realistic distribution of workload and responsibility, with management as the balancing party in case of diverging interests. The final budget is the result of cooperation and represents a contract, which has been concluded between the different affected parties and whose conditions will be pursued (Horváth, 2003, p. 248; Perridon & Steiner, 1999, p. 597).

Supply Management's Budgeting Integration: The demanded integration of supply management into the established budgeting process requires the traditionally affected parties, such as finance and the internal customer as budget owner, to change their accustomed process. This intended process change will evoke significant organisational change and discomfort, since humans have to adapt to a new environment, unknown structures and processes, and an unfamiliar personal setting in form of a new player: supply management (Moses & Åhlström, 2008, p. 88). In addition, the emerging cross-functional team needs to redefine its role as a group within the corporate setting and be aware of inherent conflicts in the form of diverging functional interests regarding budget distribution. This is of especial importance in the case of open and unbiased knowledge exchange. Thus, stable and effective group patterns and processes are critical to the success of cross-functional teams (Denison,

Hart, & Kahn, 1996, p. 1006). There are several more challenges, such as functional interdependency, misaligned functional goals and strategy complication (Moses & Åhlström, 2008, p. 90).

Construction Principle III 'Commitment': To initiate the sustainable measurement of supply management's budget effects, supply management, as well as the other affected budgeting partners, needs to be committed to undergo this change towards an integrated supply management.

There will be more cultural issues occurring in the context of elaborating a practice-oriented savings measurement concept. By means of these major aspects, which have become apparent in the course of the literature review, it was illustrated that the design of a valid effectiveness measurement concept cannot be accomplished without accounting for contextual factors, such as structure and human behaviour. Consequently, the discussion on 'structure follows strategy', as initiated by Chandler makes an appearance. Chandler (1962, p. 47) defines strategy as the "determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals". The new strategy in this case would be supply management's proactive integration in corporate planning processes, rather than involving the function's knowledge just on demand. But "a new strategy required a new […] structure if the enlarged enterprise was to be operated efficiently" (Chandler, 1962, pp. 49-50). Thus, if a concept that measures supply management's financial effectiveness in a holistic and realistic way is designed, change will become necessary concerning established practices, structures, and processes. However, as soon as change affects human behaviour and systems, resistance will emerge from the affected parties (Pearson, 1999, p. 74; Tassabehji & Moorhouse, 2008, p. 63). Based on the behavioural studies by Neely et al. (1997), in doing research, one has to be aware that this proposed savings measurement initiative can be regarded as a key agent of change (Amaratunga & Baldry, 2002, p. 217) and, hence, has to be capable of dealing with all its causing effects. Therefore, the concept will be further developed and tested in the contextual setting and in cooperation with practice, under the so-called design paradigm.

2.3.3 Research Design and Process from the Design Sciences Perspective

Van Aken (2005, p. 19) states that the major quality criterion for knowledge in academic research is **validity**, proven by an informed scientific audience. However, if research is conducted in a business environment, a second major criterion ought to be added: **relevance**. Because of the continuously advancing research methods, sophisticated solutions for complex scientific, theoretical problem sets can be elaborated, but simultaneously they become less useful for practice where the original business problem occurs (Susman & Evered, 1978, p. 582). Regarding the scientific understanding of Ulrich, Krieg, & Malik (1976, p. 136),

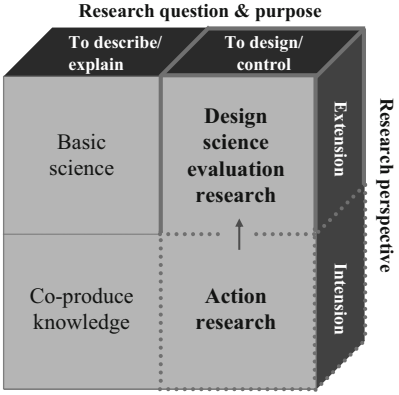
traditional business economics is a discipline that should not exclusively be founded on basic research but considered as 'scientific management' that focuses on practice-relevant problem sets – a view supported by Gleich (2002, p. 441). However, to accomplish this, managers need to have a design attitude that views each project as an opportunity to change existing patterns to improve the current situation (Mohrman, 2007, p. 15). Van de Ven (2007, p. 265) describes this mutually collaborative research, obtaining the different perspectives of the key research stakeholders on complex research problems, as **engaged scholarship**.

Research Purpose: Problem and Question

The design of an effectiveness measurement framework as the objective of this thesis has been primarily triggered by practice needs, as supply management does not gain adequate recognition on the grounds of lacking in proof for value contribution. The measurement approach shall be methodologically stringent, but also generally feasible in practice. This is not a question of exploring cause-effect-relationships through explanatory science, which develops knowledge about what is already in place, aiming at prediction and the discovery of truth under the positivist paradigm (Jelinek, Romme, & Boland, 2008, p. 317). This research approach does not fit the research question, because the one-best process will not exist due to different contextual factors and environmental settings that also have to be taken into consideration. Following Rescher (2000, p. 150), this is a research question on design, which explores normative questions about expectations for evaluating designs and policies. This problem set requires the exploration of a realistic contextual setting in which the framework will be eventually employed. It will be explored if the concept is realisable and if not it will be adjusted and the factors that impede implementation identified. Both the surroundings and the setting of the problem play a significant role within the holistic problem approach.

Research Strategy

The research problem approach can be either from the inside or outside. In case of the latter – inquiry by extension, the scientist is an impartial observer, collecting empirical data in different contexts based on pre-defined categories and dimensions to elaborate on theory. In contrast, with inquiry by intension, the scientist acts in a participatory mode, interacting with the system being studied. Context-specific knowledge is developed and with it, the scope of knowledge broadened. Both kinds of knowledge are necessary to ground a research problem in a particular situation and obtain empirical evidence from outside the pervasiveness and boundary conditions (Van de Ven, 2007, p. 270). Since both forms of inquiry, however, differ in research question and perspective, Van de Ven (2007) has outlined different approaches (Figure 19). The empirical research approach of this thesis can be allocated to the right column of this cube: applying an internal as well as external perspective on the research question in order to design an adequate effectiveness measurement process.



Source: Adapted from Van de Ven, 2007, p. 271.

Figure 19: Alternative forms of engaged scholarship.

Design Science Evaluation Research: Guba and Lincoln (1994, p. 107) define a paradigm as "the set of basic beliefs […] that deals with ultimates or first principles. It represents a world-view that defines, for its holder, the nature of the world". The term 'design paradigm' as mentioned above, however, is used in its broader sense as the combination of research questions asked, research methodologies applied to answer them, and the nature of the resulting research products. Simon (1996, pp. 2-3) argues for the 'Science of the Artificial', since by now most of the world is man-made and artificial, and especially in the business environment, the natural world is non existent. If there is natural science, artificial science also has its right to existence. Therefore, if a process is developed within an artificial setting, design sciences are the only option to apply, following Simon's argumentation. The mission of 'design sciences' or – as Hodgkinson and Healey (2008) call it – 'pragmatic science' is "a quest for improving the human condition by developing knowledge to solve field problems" (Denyer, Tranfield, & Van Aken, 2008, p. 394). Problems in reality, which require practical solutions, come to the fore. This does not mean, however, that design sciences lack rigour. They are highly rigorous but in addition highly relevant, since they develop – based on organisation theory – scientific knowledge and support the design of interventions and processes, aiming at organisational change (Hodgkinson & Healey, 2008, p. 436). Design sciences involve human beings using knowledge and experience to change existing systems and to create what should be, turning the research objects into artificial nature. The main question within design sciences is: 'Will it work?' instead of 'Is it valid or true?' (Romme, 2003, p. 562).

Design sciences view knowledge as pragmatic, normative, and synthetic and each situation as unique. As further outlined by Romme (2003), the knowledge creation process draws on

purposes, ideal solutions, and limited information, and emphasises participation, intervention, and pragmatic experimentation. Thereby, 'systems thinking' as content factors during the design inquiry, and 'participation and involvement in decision making and implementation' as value in the process design itself, represent two major values:

- **Systems Thinking:** Systems, as described by Checkland (1991, p. 7), are a set of elements, which are connected to each other via individual relations and form an entity with certain properties. These properties, however, are not the sum of the system elements, but go well beyond into the interpersonal level, referring to communication and interaction, and consider a problem as embedded within a larger system of problems. It is only possible for the designers to understand the success of implementation or to drive it in advance, when they analyse the interrelationships of the dynamic and complex organisational problems (Näslund, 2002, p. 333; Romme, 2003, p. 563).
- **Participation and Involvement in Decision Making and Implementation:** The task of business economics is to acquire knowledge empirically and methodologically, reflect on it critically, systemise it, and transmit it in an understandable manner back to practice. Thereby, in particular, the experience and practical knowledge of executives will function as valid sources for knowledge (Ulrich et al., 1976, p. 136). To gain open access to these sources, designers need commitment from practice, which can only be obtained if the scientist becomes part of the solution finding process (Romme, 2003, p. 563). This value argues not only for field research but also for the application of participatory action research, especially when organisational change is involved (Whyte, 1991).

Design sciences go beyond describing and observing, but also seek to obtain valid knowledge of the relative success of the solution itself and alternatives. Incorporating the value of evaluation, design sciences assess the empirical usefulness or impact of a design or policy. Therefore, on-site implementation in the context in which the process was designed, and direct interaction between academia and practice in the course of the problem approach, become an integral part of design sciences. This implementation aspect, however, resembles the action research approach. To clearly define the scope of the applied research approach within this thesis, the differentiation between design sciences and action research as understood within this thesis is briefly explained in the following.

Action Research: Coughlan and Coghlan (2002, pp. 222-223) state that many forms of action-oriented research, aiming at exclusively creating knowledge, can be summarised under the term 'Action Research'. Action research in general is research in action rather than about action, i.e. in the context of a three-step cyclical process – planning, taking action, and evaluating action – the solution to a social or organisational issue is developed by the scientist in direct interaction with those who are affected by the problem. The respondents are not research objects but research participants. Kemmis and McTaggart (2005, p. 564) see the

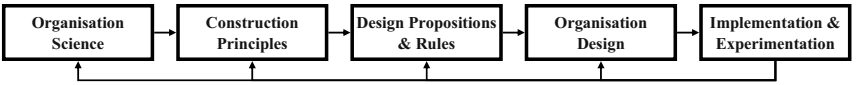
action research process as a 'spiral of self-reflection'. So far, the idea behind action research and the implementation aspect of design sciences appears interchangeable. However, at this point controversies start and the differentiation between action research as an individual research approach or as an integral method within design sciences becomes blurred. Action research is about the interaction and change itself. Its objective is to create knowledge about the intervening action. It is primarily interested in observing and analysing the impacts resulting from change and intervention rather than on designing target-oriented solutions. Action researchers realise management situations, and ask the general question: 'Could it work better in its current form?' and then intervene and change, and learn about the impact of change (Coughlan & Coghlan, 2002, p. 220). Action research is primarily concerned with problem diagnosis and hence appears past-oriented, which is often mentioned as a major critique of this approach (Romme, 2003, p. 564). Nevertheless, action research is already quite established under the participatory paradigm and on the same level like design sciences (Guba & Lincoln, 1994; Van de Ven, 2007). Cooper, Lambert, and Pagh (1997) and Van Hoek (1998) claim, especially for the field of supply chain measurement, a more action-oriented research approach, as corporate supply chains have become highly complex, and applicable and sophisticated concepts, which cannot be developed only via traditional research approaches, become necessary. In addition, Gleich (2001b) and Kaplan (1998) criticise that, despite the strong problem-orientation in business economics, action-oriented research in the field of performance measurement is still hardly considered.

Considering these statements and following Romme (2003), key ideas and methods from action-oriented research, such as systematic feedback loops, scientist's direct interaction in the implementation phase, and the claim to create generally applicable knowledge (Van Aken, 2005, p. 21), are incorporated in the design research strategy. Since the focus remains on process design, the overarching research strategy will be design sciences, whose purpose it is to be future-oriented by finding problem solutions (Romme, 2003, p. 564). Action research, being referred to more generally as action-oriented research, is treated as an integral part of design sciences, in contrast to Van de Ven's view, illustrated in Figure 19. With this defined scope of design sciences, the previously noticed blurred boundaries regarding the exact differentiation between the internal and external research perspective in the design column have become even more solid. It now becomes possible, with this understanding of design sciences, to approach the measurement process problem from the outside as well as from the inside, as demanded by Van de Ven (2007, p. 270).

General Research Process From the Design Science Perspective

Designers must base their design principles and propositions from the beginning on rigorous theory and evidence, which are relevant for the main design objectives (Hodgkinson &

Healey, 2008, p. 436) to obtain sound research solutions. Science-based design follows the research cycle pictured in Figure 20.



Source: Romme & Endenburg, 2006, p. 288.

Figure 20: Research and development cycle in science-based design.

Organisation science is based on different key concepts and theories, necessary for formulating construction principles. The constructs and relationships defined within organisation science are considered to be 'experiential', as they include empirical – survey data – as well as pragmatic evidence – experience from real life settings. The thinking within organisation science should therefore always be of a propositional nature.

Construction principles are a set of imperative propositions, grounded in the state-of-the-art current organisation science, for developing or refining existing organisational processes and designs. They express clear target-solution relationships in the form of 'To achieve A, do B!'.

Design propositions, defined as not yet sufficiently tested **design rules**, represent a coherent set of solution-oriented guidelines for designing processes in the corporate setting in the form of 'If condition C is present, to achieve A, do B!' Design rules can typically not be employed independently of other rules, when considering systems thinking and the integrated nature of organisations.

Design rules help to establish tailor-made **organisational designs**, which emerge through the interaction and implementation of the design rules, the contingencies of the design situation, and the interaction of the affected organisational members. The knowledge produced is of a prescriptive nature, operationalised in the form of technological design rules, which themselves cannot be tested, but their implementation can in the form of a re-designed corporate process.

The knowledge obtained from the final **implementation and experimentation** of the newly designed process is fed back into the corresponding research stage to continuously refine and confirm the developed design rules (Romme, 2003, p. 559; Romme & Endenburg, 2006, pp. 288-289).

Design sciences initiate their research by defining ideal target systems and processes to solve either improvement or construction problems (Denyer et al., 2008, p. 395). They do not limit themselves to understanding the nature of the problem, but also explore its causes, considering contextual factors and the advantages and disadvantages of alternatives (Van Aken, 2005, p. 22). Through this 'out-of-the-box' approach and by pursuing continuous improve-

ment and precision of the rules through ongoing feedback and forward processes, general applicability can be approached over time.

Research Design and Research Process for This Thesis

Figure 21 illustrates the methodological design research process aligned with an altered design research cycle, which is applied within this thesis.

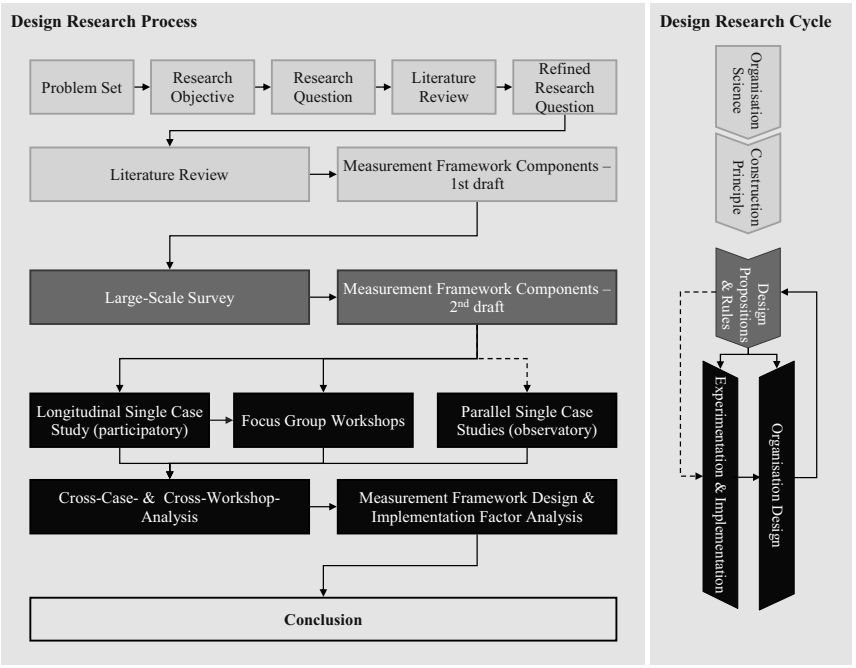


Figure 21: Design research process aligned with the modified design research cycle.

Dul and Hak (2008, p. 31) differentiate between practice- and theory-oriented research. Although the problem set of this thesis is clearly driven by practice needs and interests, it cannot be attributed to practice-oriented research, since its prime objective is not to contribute directly to the knowledge of specified practitioners or a specific company, but to theory development, applicable in practice. It is the overall research objective to elaborate on the reasons for this recent supply management internal crisis and to contribute to the development of theory regarding measuring supply management's financial effectiveness in general, and budget effects in particular, as an approach to the crisis. Participatory fieldwork will be performed, however, with the aim of drawing conclusions about theoretical propositions, not

about the specific company itself. Thus, theory-oriented research is conducted within this thesis.

"A theory is a set of propositions about an object of study" (Dul & Hak, 2008, p. 34). The **object of study**, as the stable characteristic in the theory, is, based on the original and refined research questions, effectiveness and savings measurement processes. By means of a continuative literature review, **construction principles** and a first draft of relevant measurement framework components have been developed so far.

In the context of this theory-building research, with the objective of formulating propositions from the findings and evidence obtained from the research process (Dul & Hak, 2008, p. 38), a quantitative as well as qualitative research approach is chosen. Edmondson and McManus (2007, p. 1165) endorse, especially for **intermediate theory** as in this case, the use of a blend of quantitative as well as qualitative methods. "Intermediate theory research draws from prior work […] to propose new constructs and/or provisional theoretical relationships". The combination of quantitative data – to provide a preliminary test of the relevance of certain, through literature pre-defined measurement aspects and steps – and qualitative data – to elaborate in depth on the design and validity of each single proposed measurement aspect – is expected to promote insight and rigour. If in case of intermediate theory, in which new or refined knowledge is provided – in contrast to nascent and mature theory – no qualitative methods are applied, the link to reality and context analysis might be missing; if no quantitative study were performed, there might be a lack of relevance (Edmondson & McManus, 2007, p. 1172). "In summary, intermediate theory studies propose provisional models that address both variance- and process-oriented research questions. Using both qualitative and quantitative data, these studies can identify key process variables, introduce new constructs, re-conceptualize explanatory frameworks, and identify new relationships among variables" (Edmondson & McManus, 2007, p. 1167). In addition, Romme and Endenburg (2006, p. 295) put forward that founding research results exclusively on qualitative field data within the circular design approach might face, on the grounds of their experiential and narrative nature, criticism from mainstream organisation science.

Based on these arguments, a **hybrid research methodology** is chosen within this thesis to reach an optimal methodological fit for this intermediate theory study. A large-scale empirical survey is conducted. The goals of applying this quantitative method are to (1) Explore the relevance and pervasiveness of the problem, (2) Investigate current practices in supply savings measurement, and (3) Obtain feedback on the operationalisation of the construction principles. For the latter and most crucial part, the relevance of different savings measurement steps is analysed. The survey findings result in a second measurement framework draft and the formulation of **design propositions**.

The intended scientific product of design sciences is **prescriptive knowledge**, which is expressed at the final or at least advanced stage of the research process through technological rules, which will be pursued within a certain context to reach certain outcomes. This knowledge, which will advance management theory, requires field research as a further research strategy to study real problems in a real context. It is the aim of this qualitative approach to further elaborate on the design propositions, to assess whether they hold up in the real world, and to advance them to **design rules** (Edmondson & McManus, 2007, p. 1156; Romme & Endenburg, 2006, p. 288). Thereby, physical as well as human elements of an organisation have to be addressed. Thus, field research appears to be an appropriate research strategy for the second empirical part of this thesis (Voss, Tsikriktsis, & Frohlich, 2002, p. 196; Yin, 2003, p. 5). Approaching the research question from different perspectives to obtain valid and detailed results, three different qualitative methods are chosen: a longitudinal, participatory single case study, focus group workshops, and observatory, parallel single case studies, which are explained in detail in Chapter 4.1.1.

However, a short explanation is required here regarding the changed design of the design research cycle. Outlined by Romme and Endenburg (2006), it was adapted for this research since the possibility of conducting field research in the form of a participatory case study was granted prior to the final stage of **'experimentation and implementation'**. This adjustment can be justified from the action research perspective. From Dickens and Watkins (1999, p. 128), Lewin (1947), as the originator of action research, apparently conceived it as "cycling back and forth between ever deepening surveillance of the problem situation […] and a series of research-informed action experiments. […] His original formulation of action research consisted in analysis, fact-finding, conceptualisation, planning, execution, more fact-finding or evaluation; and then a repetition of that whole circle of activities". After having analysed, and initially structured and conceptualised the data, action researchers plan the initial execution of the concept to obtain a preferably comprehensive picture of the entire problem set (Kemmis & McTaggart, 2005, p. 563). The initial conceptualisation, in this context the design propositions and second framework draft, is kept rather broad since the ideas are mainly derived from theory. These propositions are then initially implemented to obtain immediate feedback on the general idea behind the concept, and on the contextual factors that might have an impact on the concept itself and its feasibility. This feedback will be used for the identification of contextual issues, which are relevant for further process design, and substantiated within observatory case studies and focus group workshops. However, it will not be possible due to time and scope constraints to re-implement the finally revised design rules.

The findings from the cross-case and cross-workshop analysis result – within the context of this thesis – in the final measurement framework including the role and influence of relevant

contextual factors, which were identified during the empirical studies. The result of this thesis will be a set of tested design propositions, so-called **design rules** (Romme & Endenburg, 2006, p. 288), which function as guidelines for future scientific research and for the practical implementation of supply management's budget effects measurement – the **organisation design** – in particular.

2.4 Interim Result: Return on Spend as Newly Defined Indicator of Supply Management's Financial Effectiveness

Purchasing appeared to be a supporting service department with a less renowned position than other departments. However, spend volumes have been constantly increasing and operating purchasing has developed into strategic supply management, having led the profession to excellence through advanced capabilities. Top management has hence been confronted with supply management's growing potential for sustainable value contribution. But if this developmental transition had been realised effectively, supply management's value contribution would be undoubtedly rewarded. This, however, is currently not happening, noticeable from the emerging **perception gap** between supply managers' self-perception of their role and the organisation's perception of it.

Although supply managers agree upon their strategic relevance, they still focus on tactical performance measures, such as price reductions, and are hence perceived as professionals with a functional rather than corporate scope and interest. Either supply management delivers sustainable value contribution in alignment with corporate strategy or it runs the risk of being outsourced. Therefore, supply management needs to **modify** its own understanding of **value contribution** to gain strategic recognition and show its effectiveness in a reliable manner. Strategic orientation forms the basis, but to become equally accepted on a sustainable basis, strategic supply management has to direct its practices towards effectiveness – becoming **effective supply management**. Thus, the research question for this thesis is formulated as follows: How can supply management's financial effectiveness be measured in an objective and comprehensive manner?

In the course of current financial obscurities, internal as well as external stakeholders are interested in the true financial picture of their company. Since value contribution, as the sum of price reductions, exclusively creates operating incentives, it has become a too narrow definition. Supply management's **financial effectiveness** has to be comprehensively captured from a **process perspective**. Thus, the drivers of supply management's value contribution are of an operating as well as a strategic nature and put in relation to cost. However, with the introduction of the process perspective, the question arises if the idea of measuring 'purchasing's effectiveness' needs to be changed to the **'effectiveness of purchasing'**, since cross-functional collaboration plays an increasingly important role in supply matters.

Consequently, the coordination of a cross-functional sourcing team as **supply expert and cost challenger** becomes one of the major tasks of effective supply management. This new view requires, due to emerging uncertainties and information asymmetries, an effectiveness measurement concept, which considers aspects from agency theory.

Currently, there is no prospective financial indicator for controlling purposes, which expresses the monetary effects of supply management's achievements in the form of a profitability measure such as Return on Investment. An adequate effectiveness measure must show the monetary impact of supply management's achievements in financial terms and – to avoid the criticism of uni-dimensionalism – its calculation must be based on the strategic as well as operating dimension. The measure has to be future- and shareholder-oriented, comprehensive, integrative, transparent, and comparable. The RoI-concept appears applicable in a functionally modified manner for measuring supply management's financial effectiveness in the demanded way – by introducing Return on Spend (RoS):

$$\textbf{Return on Spend} = \frac{\textbf{Supply Management Savings} - \textbf{Supply Management Cost}}{\textbf{Total Supply Management Spend}}$$

Although, price reductions are mostly used as performance indicators, CPOs evaluate them as unreliable, since they are biased and hence lack comparability. Taking these deficiencies into account and since supply management's value contribution is required to be reconsidered in terms of process costs, savings also need to be redefined.

Supply management directly influences budgets, which in turn contain total costs to accomplish the planned demand. This is the major reason, why measuring supply management's savings in terms of **budget effects** seems to be a valid alternative approach. However, this step requires supply management's integration into the budgeting process, to concretise and create transparency on cost reductions before budgets are finalised. Therefore, budget effects consist of on-top cost reductions during the business year, but also planned cost reductions, which are already included in the final budgets.

Consequently, the research question had to be refined to: How can supply management's budget effects be measured in a reliable manner? To achieve solid results, a consistent measurement process is required, which starts with **planning**, continues with the **monitored realisation** of the planned cost reductions potential, and finishes with the **measurement** at the end of the business year. This innovative measurement approach, however, will not only have an impact on the measurement process itself but also on the affected organisational parties. Thus, for feasibility and relevance reasons, a hybrid research strategy under the **design paradigm** is applied for the further process design.

3 Measurement of Supply Management's Bottom Line Impact: Status Quo and Future Requirements

Management has realised supply management's contribution to profitability and shareholder value (Albright, 2003, p. 12; Anonymous, 2007, p. 74) and hence aims at measuring its value contribution under one common aspect: the measurement of those savings that were contributed by supply management directly to the corporate bottom line (Buchholz, 1999, p. 52) – supply management's budget effects. However, the question regarding the reality of the savings measurement problem remains unanswered. Thus, the status and future of savings measurement practices are explored empirically.

This chapter outlines the process of designing, conducting and analysing the 2008 large-scale empirical survey on 'Measurement of Supply Management's Bottom Line Impact – Status Quo and Future Requirements'. To design an improved savings measurement approach, which tries to dismantle current measurement inefficiencies, it is essential to know about the status and future direction of savings measurement practices. The survey set-up is the integral element of Sub-chapter 3.1 on methodology. The questionnaire design process, response rates, and sampling are explained in detail, to provide necessary and relevant information on the scientific rigour, data quality, and result validity. Concerns about the relevance of the savings issue in reality and advanced savings measurement systems in use are discussed in detail in 3.2. Thereby, the focus is laid upon the description of current savings measurement practices, with their strengths and weaknesses, and investigation of the perception gap. Due to the criticism on unreliable savings measurement results, the general measurement approach is refined. Different measurement steps and process components encounter a threefold evaluation by the respondents concerning their individual measurement relevance in general, and their current and future degree of application. With these statements, relevant measurement elements are identified and approved. Based on the overall survey results, a further advanced measurement process design – the second draft – is presented in 3.3, which concludes with six design propositions.

3.1 Quantitative Methodology

To test hypotheses and obtain answers for the formulated research questions, Rea and Parker (1997, p. 6) present several types of sample survey research. In this case, a structured mail-out survey was chosen for the following reasons: (1) Anonymity considering the highly sensitive topic, (2) Standardised and no interviewer-biased answers, especially for the evaluation of ideal measurement components, (3) Limited human and financial resources, and (4) No immediate time limits. Return on Spend was not the subject of the investigation, since its formula represents a degree of complexity, which is, without face-to-face explanation, too

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high to be explored through mail-out surveys. Since the term 'budget effect' is neither widespread nor commonly defined in practice, it was substituted with the better-known term 'bottom line savings', which was defined synonymously and used to avoid a linguistic bias. Within this chapter, the methodology of this type of survey is outlined. The objectives and the structure of the questionnaire are explained in 3.1.1. The process of data collection with the applied techniques for stimulating the response rate and the response pattern itself are presented in 3.1.2. The sample with its characteristics and an evaluation of the non-response bias form the focus of 3.1.3.

3.1.1 Questionnaire Design

The content and structure of the questionnaire (Appendix A) were oriented at the objective to obtain a qualified picture of the

- Importance of measuring supply management's budget effects in practice,
- Current handling of certain relevant savings measurement aspects,
- Ideal and future development of the savings measurement practice, and
- Relationship between measurement elements and the certainty on measurement results.

QUESTIONNAIRE STRUCTURE

The structure of the questionnaire was tripartite (Figure 22):

(1) Relevance of measuring supply management's bottom line impact

This part examined if the theoretically identified relevance of the measurement issue corresponded to practitioners' perception. The opinion of the single respondent as well as board members was considered important. However, due to feasibility issues, board members' perspectives were approximated through the perception of the respondent.

(2) Current savings measurement practice

The differentiation was made between generic savings and bottom line effective savings measurement. If and why purchasing and supply management measured savings was explored. The system evaluation was based on critical measurement components, identified through literature and pre-tests. The certainty on the measurement results and the reasons for below 100% certainty was emphasised for indications of measurement quality.

(3) Evaluation of pre-defined elements of bottom line impact measurement

The measurement process was operationalised to obtain feedback on the reasonability and necessity of the proposed measurement components. Thus, each component was queried from three different perspectives: (1) Is the particular aspect considered relevant in an ideal measurement concept? (Ideal), (2) To what extent is this aspect already implemented? (Status Quo), and (3) To what extent will this aspect be implemented? (Future).

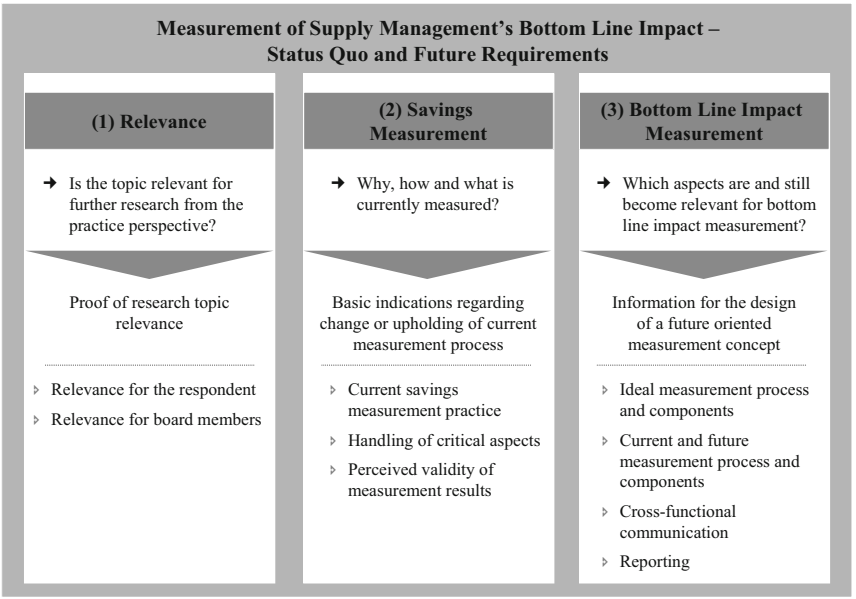

Figure 22: Questionnaire structure.

Questionnaire Development Process

Questions, wording, and formatting, are critical survey success factors (Fowler, 1995, p. 10; Labaw, 1982, p. 1). Hague (1993, pp. 29-30) distinguishes between behavioural, attitudinal and classification questions. Besides some classification (industry, purchasing volume, etc.) and behavioural questions ('Do you measure…?'), the majority of the questions were of attitudinal character, for which the respondents were asked to make qualified evaluations of a given statement ('How do you agree…?'). For standardised and comparable answers, a five-point Likert scale with the ends 'strongly disagree' and 'totally agree' was used as an answer mode (Alreck & Settle, 1995, pp. 116-117). Due to assumed time constraints on the practitioners' side, the response rate was tried to be pushed with closed end questions (Rea & Parker, 1997, p. 34). Words determine respondents' interpretation of the questions and hence the answer quality (Labaw, 1982, p. 2). Thus, with the help of a pre-test group, consisting of practitioners as well as research fellows with different degrees of technical knowledge, the validity of wording and terminology for senior purchasing professionals as the target group was tested for ambiguity and comprehensibility, and the questionnaire in total for time length. Since the questionnaire, sent via official mail, directly reached the respondent, the visual appearance was of major importance for the answer quality (Sanchez, 1992, p. 216).

Therefore, the following techniques were applied to stimulate the response rate:

- Covering letter with research problem, objectives, benefits, deadline, and contact,
- Cover page with study characteristics and processing notes,
- Visible fax number, and
- Coloured printout.

3.1.2 Data Collection

Despite its clear advantages, the questionnaire method mainly suffers from a non-response problem. Thus, motivating factors for stimulating the response behaviour have been widely explored (Cavusgil & Elvey-Kirk, 1998; Linsky, 1975). Kanuk and Berenson (1975, p. 440) classify them by technique and timing, which were both applied:

- **Technique:** The basic concurrent techniques, in the form of advanced visual appearance, as described above, and the postscript remark that even non-completed questionnaires were of major help (Friedman & Arenstein, 1984, p. 47), were directly embodied into the first wave questionnaire. Cost-intensive actions, such as promising rewards, were not employed due to budgetary limits and lacking proof of significant impact (Cavusgil & Elvey-Kirk, 1998, p. 1185).
- **Timing:** Since technical interest appeared to be the major participation trigger – due to the lack of unlimited funds and an organisational sponsor (Goulet, 1977, p. 112) – the most promising response driver was assumed to be follow-up actions, presenting the study differently and more appealing each time (Linsky, 1975, p. 85). However, despite the proved significance of certified follow-up mail (House, Gerber, & McMichael, 1977, p. 98), reminder actions were accomplished through electronic mail for economic reasons.

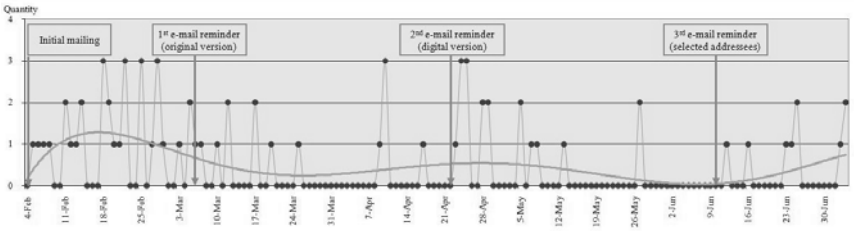

Figure 23: Questionnaire responses.

The entire mailing action lasted from February to July 2008 (Figure 23). In the context of the first wave, 32 responses were received, which equalled 45% of the total response. After four weeks, the first reminder was sent by e-mail, which did not show a clear distinguishable effect, as it melted into the effects of the first wave (11% of total response). The questionnaire

had remained unchanged and had been added as an electronic attachment. The second reminder, marking the second major wave, was sent after another seven weeks and had hence a more re-initiating character, than a reminding one; especially as it introduced the web-based questionnaire (29% of total response). The remaining 15% of the total returned questionnaires was achieved through a third reminder in the form of 20 informal e-mails to personally known non-respondents. Thereby, it can be assumed that biased and unreliable results due to the increased pressure from the frequent reminders, as suggested by Schneider (1985), was diminished as all cover letters were personalised and, if possible, even personally motivated (Dillman, 1978, p. 6; Dunn & Huss, 2004, p. 1053).

3.1.3 Sampling

The population for this study was defined very broadly since a general insight into the savings measurement practices was to be achieved. Only the following two **respondents' characteristics** were determined:

(1) Professional of a purchasing and supply management-related corporate function, and

(2) Company headquarters located in a German-speaking country.

In addition, the measurement of supply management's bottom line impact appears relevant only for those organisations that dispose of a supply management function and are interested in approving its skills. Thus, the visitors of the 42nd Symposium of the 'Bundesverband Materialwirtschaft, Einkauf und Logistik e.V.' (BME) were identified as the relevant **population** from which the sample was drawn. The BME-Symposium is Europe's biggest and most important symposium for purchasing and supply management. It is open to the industrial, service, and public sectors, and attracts more than 2,000 visitors. The knowledge transfer and comparatively high participation fees imply that the BME-Symposium visitors are already aware of supply management's importance and are primarily interested in their continuous advancement (Bundesverband Materialwirtschaft, Einkauf und Logistik e.V. [BME], 2008a & 2008b).

The original sample frame consisted exclusively of company names. The contact details of potential respondents had to be researched individually, which required high human resources. Due to these capacity constraints, the identification of potential respondents had to be limited to 307 member companies, randomly selected from the population. Discussing the issue of sample reliability, Alreck and Settle (1995, p. 62) state that for a population of 1,000 a sample size of 100 respondents would be the maximum limit. Considering the fixed number of 307 available addresses, a **sample size n** of approximately 70 was estimated to be realistic, tolerating a standard error of the estimate to a small degree. In total, 72 completed questionnaires (n = 72) were returned, which represents a **response rate** of 23.5%. This response rate exceeds average response rates obtained from other recent purchasing related mail surveys

and should therefore not provide significant room for criticism (Kocabasoglu, 2002, p. 91; Larson & Morris, 2008, p. 116; Lockström, 2007, p. 91; Paulraj et al., 2006, p. 112).

The **non-response bias** was approximated, following Lockström (2007), based on the modified extrapolation method described by Armstrong and Overton (1977, p. 397). They carried out the extrapolation over successive waves, i.e. since all responses after the first wave are regarded as the consequence of a stimulus, the characteristics of these respondents after the first reminder resemble non-respondents' characteristics. Thus, it is assumed that the combination of the last waves is representative of all the non-respondents to the first mailing (Kanuk & Berenson, 1975, p. 449). Despite Newman (1962) not finding any significant differences between early and late respondents regarding social factors, initial mailing-respondents were weighted to follow-up-respondents based on the following three nominal variables: industry, purchasing volume, and number of supply management employees (Appendix B). A chi-square test proved no significant differences between early and late-respondents regarding industry ($\chi^2_{13df} = 14.938$, $\rho = 0.324$), purchasing volume ($\chi^2_{5df} = 3.780$, $\rho = 0.607$), and number of supply management employees ($\chi^2_{5df} = 3.281$, $\rho = 0.682$). Thus, there was no significant response bias detectable in this sample. Due to the comparatively small number of queried demographic grouping variables and the little disposable information of the population, the tests for non-response bias were limited to one stage (Paulraj et al., 2006).

3.2 Status Quo of Savings Measurement Practices

Tassabehji and Moorhouse (2008, p. 63) explain the problem that purchasing unanimously agrees upon its strategic achievements and importance. However, the organisation itself does not hold this particular view, leading to the perception gap. Through a detailed descriptive analysis of presently applied savings measurement practices, insight into current issues, and future challenges and requirements is obtained. An additional focus within this chapter is the exploration of the perception gap from the practice perspective. In 3.2.1, the sample characteristics are discussed to provide an overview of the respondents and their background. With this knowledge, cross-industrial comparisons in particular can be drawn. The discussion of the results content-wise is initiated in 3.2.2 with the status and importance of savings measurement in the current economic setup. Since the question about the existence of well-developed savings measurement practices was expected to incorporate personal bias, the need for improved savings measurement systems was further investigated. In 3.2.3, the characteristics of currently applied savings measurement practices are analysed in depth.

3.2.1 Sample Characteristics

Having asked the respondents for their company's industry sector, the indications could be grouped according to the European NACE coding into14 industry sectors (Figure 24). It was expected that the three traditional industries – mechanical engineering, chemicals, and automotive – would represent more than one third of the total respondents, since all largely represented industries pronounced a very positive and optimistic corporate development with major sales increases for the business year 2008 (Deutscher Industrie- und Handelskammertag e.V. [DIHK], 2007, p. 5).

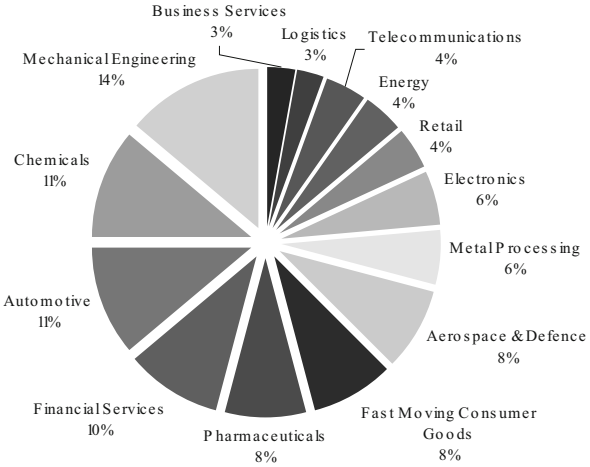

Figure 24: Industrial distribution.

Purchasing volumes in those industries already represent more than 50% of the total turnover, with a tendency to grow. What appears surprising at first sight is the participation of financial services and pharmaceuticals, known for their high real net output ratio. However, the re-orientation on their core business to strengthen their competitive position, the outsourcing trend, and with it the growing importance of supply management, have also reached these sectors (Jahns, 2005, pp. 2-4). Nevertheless, 76% of the participants came from manufacturing, in contrast to 24% from the service industry.

The distribution regarding corporate sales volume is rather even (Figure 25). The international market leaders with sales volumes of more than €10 billion were in the same proportion included as small enterprises with less than €500 million. The medium enterprises represent 50% of the sample size. The purchasing volume is not as equally distributed, which can be explained by the differing real net output ratios of the various industries. Like the distribution concerning the number of purchasing and supply management (PSM) employees, the middle

layer is represented the most. Thus, it can be concluded that no particular industry or company size is over- or underrepresented. The analysis results will hence represent the opinion and requirements of all relevant players in a rather balanced manner.

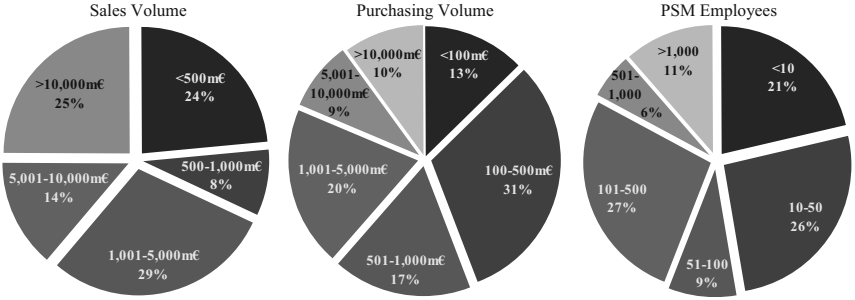

Figure 25: Distribution over 'corporate sales volume', 'purchasing volume', and 'PSM employees'.

3.2.2 The Relevance of Measuring Supply Management's Bottom Line Impact

If supply management remains on the operating level and is not proactively involved in strategic issues, its sustainable and significant corporate value contribution is diminishing (Zsidisin, Ellram, & Ogden, 2003, p. 147) and with that, the doubts of the necessity of inner-corporate existence rise (Carter et al., 1998, p. 29). To prove if this critical situation is present in practice, respondents were asked if PSM finds itself increasingly in the position of justifying its right of existence within the company (Figure 26).

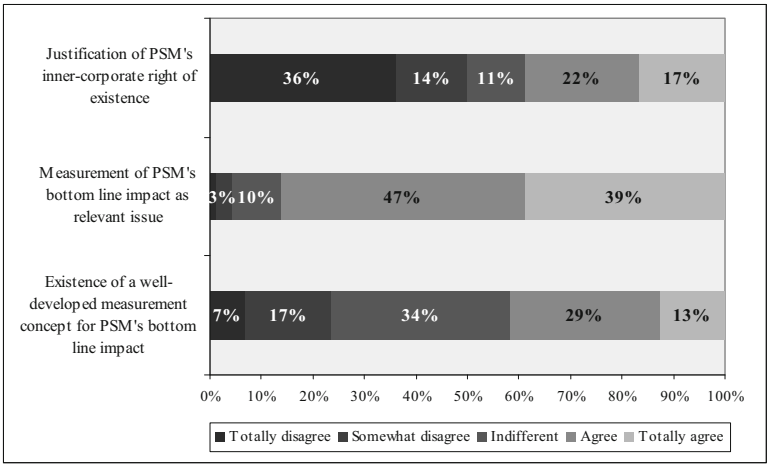

Figure 26: The relevance of measuring supply management's bottom line impact.

50% answered with a direct ‘no’. However, 39% felt that they have to justify their corporate existence mainly concerning its strategic value. With 11% of the respondents evaluating this circumstance as neutral, which eventually leads to a 2.7 as mean on a five point scale, a similar picture as described in literature appears: approximately half of the respondents have already experienced functional advancement from purchasing to supply management and are hence barely faced with inner-corporate justification. Nevertheless, 40% of the participating companies feel legitimate pressure, which shows that their functional capacities have not been advanced and exploited yet. However, combining this fact with the statement that only 24% do not dispose of a well-developed measurement concept for PSM’s bottom line impact provides room for interpretation: Since fewer companies do not have a measurement concept than need to justify PSM’s inner-corporate existence, it can be concluded that even the still more traditional PSM functions are moving – either intrinsically or extrinsically motivated – towards change. This can also be observed through the large ‘indifferent’ portion of 34% and the mean score of 3.2.

The question, if upper management considers the measurement of PSM’s bottom line contribution as a relevant issue, was answered – with a mean of 4.2 – quite homogenously: 86% with a definite ‘yes’ and only 4% with a clear ‘no’. These results even exceeded the expectations derived from literature. The enormous significance of supply management’s contribution to the bottom line and its recognition in the corporate context were identified in literature (Day & Lichtenstein, 2006; Ellram & Liu, 2002; González-Benito, 2007; Singhal & Hendricks, 2002) and are now shown unanimously in practice as well.

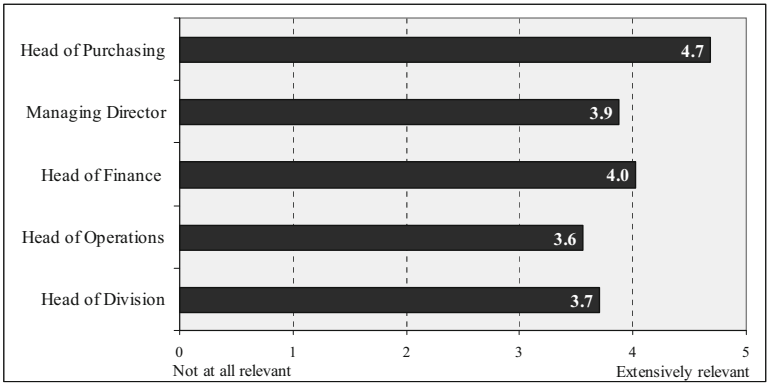

Figure 27: The importance of PSM value contribution measurement to different hierarchical functions.

Figure 27 illustrates the measurement importance to different hierarchical functions, as perceived by the respondent. The results demonstrate that to none of the positions the

measurement is of minor importance, visible through the means greater than 2.5. However, a hierarchy of importance becomes obvious: with a mean of 4.7, the head of purchasing is most interested. This is reasonable, since he should be concerned about his department's and with it his own performance, especially when an increasingly variable part of his salary depends on it (Carter et al., 1998). The finance head with 4.0 on the second rank has realised that supply management plays a vital role in cost management (Zsidisin et al., 2003) and hence is central to the organisation's strategic goals. However, scepticism explains the major CFO interest in PSM's bottom line impact measurement: finance heads doubt the appropriate integration of corporate and supply management goals and additionally criticise the limited visibility and transparency of the supply chain financials (Voyles, 2003, pp. 7-8). Since general managers are also primarily interested in the coordination, alignment, and interplay of capabilities and knowledge, and eventually decide on functional outsourcing activities (Carter & Narasimhan, 1996, p. 9), their interest in measurement results comes with 3.9, directly behind the financial heads. In addition to the above selected functions, 8.3% of the respondents indicated autonomously that internal stakeholders such as engineering and sales consider in their function as budget owners bottom line impact measurement as substantially important. This adumbration indicates that internal customers also realise the importance of supply management's role.

Summarising, the development from purchasing to supply management, identified in literature, can be further supported through practice estimations. *"To raise the credibility and status of the purchasing function it is very important to measure and report the results of its various actions. The impact needs to be linked to the bottom line to prove the effectiveness and create transparency"*, as a respondent concluded in the comment section. Supply management's current status can be characterised by one single factor: change – from traditional purchasing over strategic to effective supply management. Because of this current uncertainty situation, guidance in the form of a structured effectiveness measurement concept identifying all change-driving factors becomes necessary.

3.2.3 Current Savings Measurement Practices

"In our company, the savings achieved by purchasing and supply management are currently measured", 88% of the respondents agreed with this sentence (Figure 28). Only 1% indicated that they are currently not measuring PSM savings, nor will they do so in the near future. The remaining 11% will measure them soon, i.e. within the next year. The same question was asked for the measurement of PSM's bottom line effective savings. Only 56% pointed out that they are currently measuring them, whereas 31% plan to do so soon. An industry specific view on the implementation of measurement practices (Appendixes C & D) shows that the majority of industries have already implemented a total savings measurement approach.

However, regarding the budget effects measurement, only electronics and retail dispose of a fully applied measurement system. It is interesting to note that concerning savings measurement maturity, the differentiation between traditional industries, emerging industries, and services cannot be maintained.

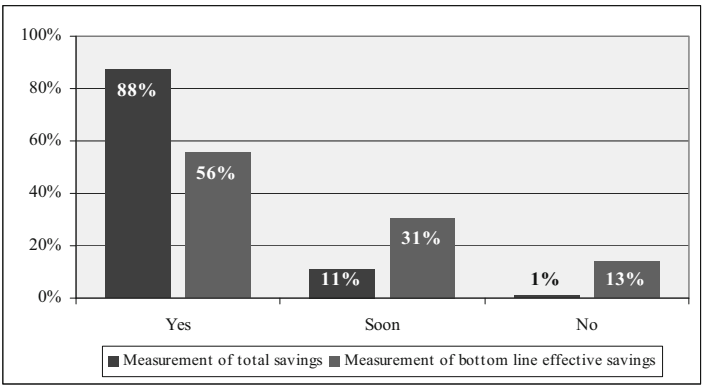

Figure 28: Currently applied total savings and bottom line effective savings measurement practices.

In a previous question, 42% indicated that they already apply a well-developed measurement approach, so the difference between that figure and the 56% implies that 14% still measure supply management's bottom line impact in a sub-optimal way. 13% will not measure budget effects in future, mainly for the following two reasons:

- Lack of serial orders and standardised products, which complicates comparisons, and
- Highly decentralised and independent purchasing departments.

These reasons only affect the company nature and the organisational structure of the supply management function, both aspects, which cannot be changed (products) or only through complex restructuring (organisation). No other arguments were put forward, which reflects the general preparedness and willingness of the companies to measure PSM's bottom line impact.

To obtain insight into the driving measurement forces, respondents were asked for which reason they measure supply management's total savings (Figure 29). The two most agreed reasons were to prove the achieved objectives and communicate supply management's performance internally. Supply management shows an eagerness to present its full capabilities. To become an equal business partner, supply management has to reach set goals, and top management as well as other functions has to note their achievement, otherwise supply management will not be rewarded and its importance not realised (Tassabehji & Moorhouse, 2008, p. 63). Almost 60% of the respondents see adjustment and budget optimi-

sation as important reasons. Consciousness of its role as cost manager and expert has reached supply management. If they integrate their knowledge on supply market and market price development already in the budgeting phase, supply managers will contribute to a more efficient capital resource allocation and thereby perform proactive risk management, strengthening the corporate competitive advantage.

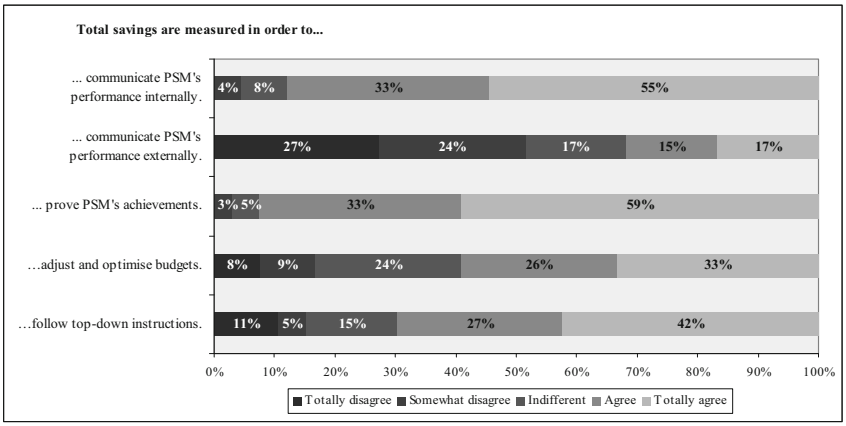

Figure 29: Reasons for measuring supply management's total savings.

The heterogeneous response structure for the external communication of supply management's savings suggests that current structures are shifting. Still more than half the respondents indicate that this was no reason for measuring savings; however, the other half did not totally reject it. Since the CFO and shareholders draw their attention to supply management's achievements, they expect unambiguous communication of its functional efforts also to the outside (Voyles, 2003, p. 23). After evaluating these reasons, the already obtained impression of supply management's continuous and sustainable advancement in practice is strengthened. However, the perception gap is present again through the fact that 69% indicated that they measure savings because they were instructed by the hierarchically higher level. In this circumstance, supply management presents itself as extrinsically motivated, instead of its functional ambition to prove its relevance and corporate value contribution. This supports the view that supply management is still captive within its traditional understanding, not yet completely proactive. Another type of change becomes apparent – a change of mindset (D'Souza & Williams, 2000, p. 227).

Critical Aspects in the Savings Measurement Practice

During the literature analysis, six critical measurement elements emerged (Figure 30):

- **Savings definition** – Savings are mostly defined as price reductions. Cost avoidance or additional benefits are rarely considered as part of the reported savings (Enderby, 1998, p. 45; Hayes & Renard, 1964, p. 47).

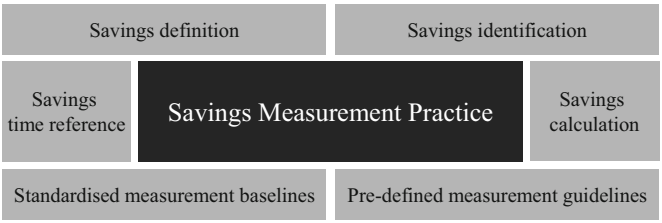

Figure 30: Critical elements in traditional savings measurement practices.

- **Savings identification** – Previous minus current prices result in savings (Wagner & Weber, 2007, p. 20). The comparison of budgets or contracts are scarce alternatives.
- **Savings calculation** – Savings can be determined based on estimations at the year-end, or they can be planned and tracked during the year (Jahns & Henke, 2007, p. 28).
- **Savings time reference** – To report savings and their effects in the corporate context, they need to be measured business year-related (Bertsche & Jahns, 2007, p. 22).
- **Standardised measurement baselines** – Measurement needs consistent baselines to mitigate room for manipulation (Chan et al., 2006, p. 1046; Mol, 2003, p. 6).
- **Pre-defined measurement guidelines** – The issuance of unambiguous measurement guidelines is critical to reliable measurement results (Gleich et al., 2009, p. 109).

Looking first at the basic measurement requirements – measurement guidelines, time reference point, and defined baselines, 83% agree or fully agree with the statement that they follow pre-defined measurement guidelines (Appendix E), which is reflected in a mean of 4.3 (Figure 31), the highest among the basics. Although the mean of defined measurement baselines is with 3.7 remarkably lower, still 70% and 66% respectively follow clearly defined measurement baselines for initial and re-purchases. A mean of 3.8 implies a higher level of agreement; however, only 60% relate the measurement results consistently to the previous accounting period. These variances in the response patterns imply certain restrictions regarding the full employment of these basics and lead to the conclusion that supply managers apply them, however, do not follow them persistently.

Another impression, reflected by the responses, is again the still prevailing traditional measurement approach. Despite the fact that 80% of the respondents plan and track their

savings throughout the year, only 52% identify savings through budget comparisons. 96% still rely on traditional price comparisons and 72% on contract comparisons (Appendix F), showing homogenous response patterns and leading to the means of 4.6 and 3.8 respectively, significantly above the mean of 3.1 concerning budget savings.

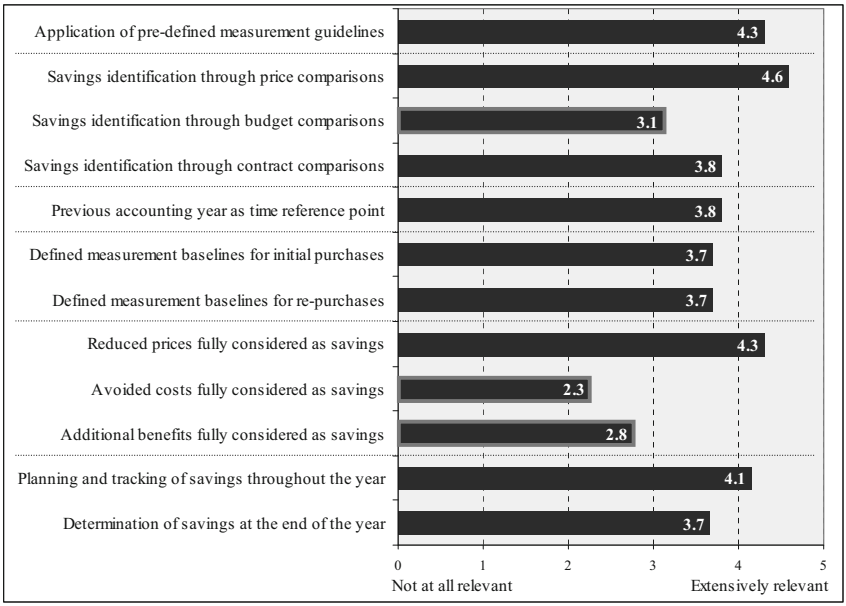

Figure 31: Status quo of currently applied supply savings measurement practices.

This circumstance again supports the perception gap: supply managers indicate to plan and track savings and simultaneously identify savings through price rather than budget comparisons. This implies that supply managers plan their functional price savings in a myopic way, to fulfil the traditional expectations towards the purchasing function, without corporate alignment, not aiming at contributing to the improvement of the corporate financial situation. 38% indicating that they at least somewhat disagree with budget comparisons shows their distance from the ideal integrated supply manager.

Supply management does not follow the basic measurement criteria without a certain reservation, indicates to plan but does not appear to align the planned savings with the overall business goals, but only defines savings as price reductions (84%; mean of 4.3). Cost avoidance (22%) or even additional benefits (30%) are recognised by not even one third of the participating companies as part of supply management's bottom line impact (Appendix G). This shows that the current mindset in practice – on supply managers' as well as manage-

ment's side – is not adequately set for the acceptance of supply management as equal business partner.

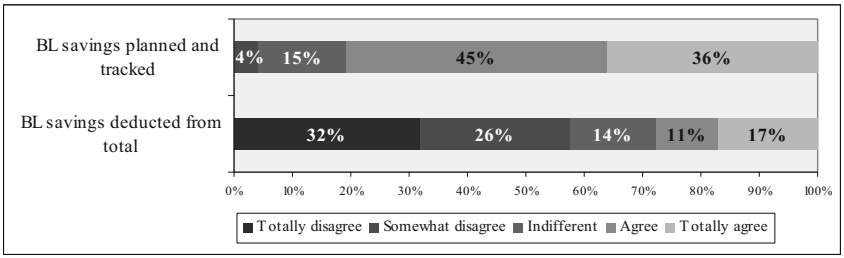

Figure 32: Calculation process of bottom line effective savings.

Narrowing the total savings area to bottom line effective savings, a similar picture appears: 56% indicate that they already measure bottom line effective savings. Out of these, 81% indicate (Figure 32) that they plan and track the savings, corresponding to a mean of 4.1. Only 4% disagreed somewhat with the savings planning and tracking approach. Consequently, only 28% determine bottom line savings at the end of the year through deduction methods, resulting in a mean of 2.6. Out of these 28%, only three respondents disagreed somewhat to planning and tracking. All the others plan at least to some degree. This shows that if supply managers measure bottom line savings explicitly, they do not simply determine them retrospectively, but act prospectively to a certain extent.

The Uncertainty on Measurement Results

Although almost half of the respondents indicated that they apply a well-developed measurement concept for supply management's bottom line impact, it has been shown that the understanding of well-developed does not correspond to the requirements. If 42% think they apply a well-developed concept, they should be satisfied with measurement results as well. A certainty on measurement results of 84% was indicated on average. At first sight, this figure appears unexpectedly high. Breaking this figure down for nine out of the 14 industries (Figure 33), however, a certainty of 100% was only obtained in metal processing and the certainty spread equalled 35%. It appears contradictory that 50% of those companies which measure supply management's bottom line impact and indicate 100% certainty on the results, evaluate the unplanned spend by internal customers as the most important reason for result uncertainty. These outcomes, certainly representing personal bias to a certain extent, show again the diverging perceptions of supply managers.

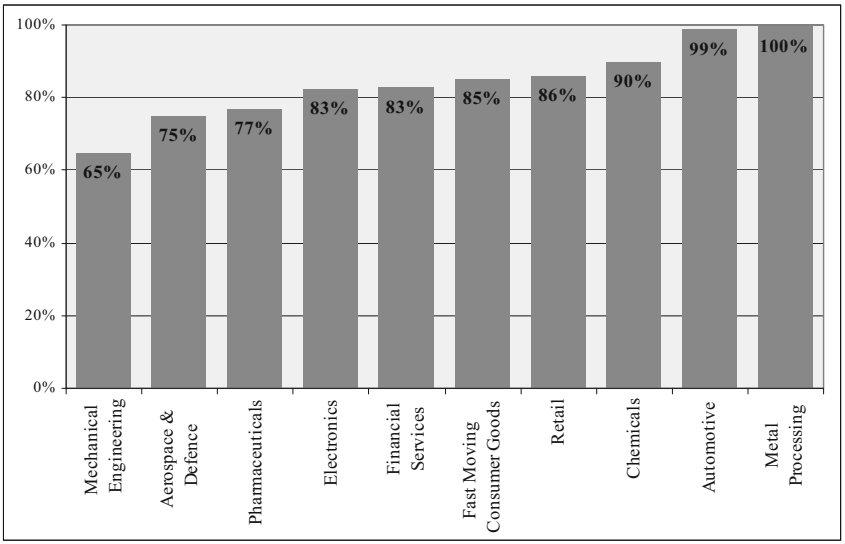

Figure 33: Certainty on the measurement results within the different industries.

Since financial reporting leaves certain room for interpretation regarding the accountability of savings (Karrer, 2006, p. 161), the most important reason why supply managers have doubts regarding the bottom line savings, is the inconsistent time reference point (Figure 34). An accurate one-year time reference needs to be pursued to relate supply management's corporate impact to budgets in the context of financial reporting.

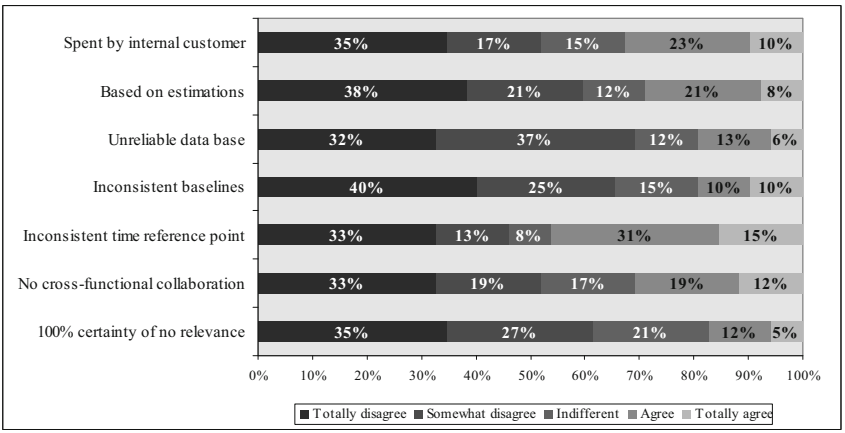

Figure 34: Reasons for the measurement result uncertainty.

The second two most important reasons for uncertainty are unplanned expenditures of internal customers and a lack of cross-functional collaboration. Since supply management does not freeze its savings achieved during the period, internal customers react and spend them for non-budgeted material. Because cross-functional collaboration is only scarcely implemented, supply management cannot keep a record of its savings in such a way that top management can identify or track them in the income statement (Gleich et al., 2009; Jahns & Henke, 2007). Since retrospective savings tracking, which is currently applied if accuracy on bottom line impact is demanded, requires a great amount of resources, bottom line savings are currently frequently based on estimations and experience. These represent the major issues. Only 20% in general agreed on the importance of inconsistent baselines, unreliable database, and the fact that 100% certainty is simply not as important as reasons for inaccurate measurement results.

The impression of an existing perception gap appears also in practice: on the one side, supply management reaches towards corporate acceptance, but on the other side remains with traditional, non-recognised measurement approaches. If presumably well-developed bottom line impact measurement concepts are deployed, essential parts such as the budget connection which guarantees sustainability, are not considered. Current measurement practice appears unstructured, already trying to modify and adapt to actual requirements, but still maintaining traditional structures. This fact is supported by the comparably high indication of not entirely reliable measurement results. If supply management was already established as discussed in the literature and equipped with supporting tools, the analysis would convey unambiguous results.

Concluding, it can be stated that in current supply savings measurement practices, there is a lack of structure, motivation, and guidance for change. Supply managers need an advanced understanding of themselves in order to perform solid measurement. If measurement is primarily motivated through management instructions, without supply management's ambition to become involved in corporate planning processes, savings measurement cannot be achieved in an integrated and solid manner. However, this understanding does not seem to be fully given yet.

3.3 Requirements for Supply Management's Budget Effects Measurement

The design of an initial solution for the above stated problem is the focus of this chapter. It is unanimously agreed that a standardised measurement process with certain measurement guidelines with which all affected parties need to comply becomes top priority in order to achieve consistent and comparable measurement results. However, no study was discovered that had proposed certain operating measurement steps and also queried their relevance and validity in practice. This was done in the third part of this survey.

Certain measurement steps and process components were identified by means of literature analysis and queried regarding their ideal, present, and future state of implementation (3.3.1). Thereby, interesting gaps were identified, leading to potential corporate inhibiting factors. As a final concern of this survey analysis, in 3.3.2, the question is answered by means of a linear regression model if certain or even all proposed measurement components are themselves effective. Which components significantly contribute to an increase of certainty on the savings measurement results is analysed. The chapter conclusion is drawn in the form of a further, advanced budget effects measurement process design. The design propositions, which are also formulated in 3.3.3, form the starting position for further research – of a qualitative nature, in the field, and close to reality.

3.3.1 Components' Relevance for an Adequate Measurement Approach

To introduce the 'Return on Spend' for reliable financial effectiveness results, supply management needs to change its savings understanding and become involved in corporate planning processes. Since it was proven that the function still pursues the traditional measurement approach and does not seem to have fully realised its new corporate role yet, certain steps for guiding change – concerning measurement as well as functional change – were defined to be proven in the survey context. The three-step measurement approach 'planning – realisation – monitoring' and 'measurement prerequisites' as an additional step obtained from the survey, were operationalised through 13 characteristics and process steps, which were deduced from the literature (Table 2).

The direct evaluation of the steps led to the comparative results, illustrated in Figure 35. In general, the status quo of all 13 aspects is below the ideal and intended future state. None of the evaluations is below 3.0 out of 5.0.

- **Ideal state:** Respondents should evaluate the importance of the single components for an ideal measurement concept. The highest value of 4.4 achieved the 'implementation of a standardised measurement process', reflecting a basic requirement for sustainable measurement results. The lowest value of 3.8, however, was given to 'strategic planning involvement' and 'assignment of monetary savings potential', which both represent more innovative measurement components. The latter result can be explained through practitioners' stated opinion that the savings realisation itself is important, not the 'how'. Such statements also explain the comparative unimportance of planning integration, since this would require resources that can be utilised for the realisation of savings – a myopic purchasing perspective, not yet prepared for intrinsic change.
- **Present state:** In the current state, the average equals 3.5 over all components. Below average are again the 'modern' components, such as 'planning and budgeting involvement', 'commodity planning, strategy operationalisation', and 'identification of monetary savings

Table 2: Overview of relevant budget effects measurement components.

	CHARACTERISTIC/ PROCESS STEP	DESCRIPTION
Integration	Budgeting involvement	Institutionalised participation of PSM in the budgeting process in the form of information delivery as well as information reception for efficient budget creation.
	Cross-functional collaboration	Institutionalised information exchange and cooperation between PSM, internal customers, and corporate level.
Measurement Prerequisites	Standardised measurement baseline	Standardised measurement starting point in order to obtain comparable and reliable measurement results.
	Standardised measurement process	Standardised, structured, communicated, and objective measurement process in order to obtain transparent measurement results and room for necessary management reaction.
Planning	Strategic planning involvement	PSM's involvement in the corporate strategic planning process especially concerning intended company-wide sourcing activities such as outsourcing, offshoring, supplier bundling, etc.
	Sourcing and business strategy alignment	Alignment of PSM's individual sourcing strategy with corporate strategy and objectives to reach towards one common goal as prerequisite for PSM's effectiveness.
	Commodity planning	The detailed analyses of each category or commodity by the particular person responsible in order to obtain profound knowledge regarding the given market and corporate environment.
	Commodity strategy development	Depending on the demand, elaboration of category-specific strategies in order to obtain optimal purchasing conditions for the particular category or commodity.
	Sourcing strategy operationalisation	Operationalisation of the particular strategies through the design of adequate and strategy-supporting supply activities and practices.
	Assignment of monetary PSM savings potentials to PSM practices	Identification of budget saving effects as a consequence of each planned supply activity and practice, leading to adjusted budgets and with it efficient capital allocation.
Realisation, Monitoring, & Reporting	PSM practices realisation tracking	Structured and focused tracking and monitoring of the realisation of the planned activities.
	Linkage of PSM savings and PSM practices	Analysis of the achieved budget effects in the form of linking it to the corresponding supply activity.
	Objective PSM savings reporting	Objective reporting of supply management's effectiveness in the form of budget effects and RoS, integrated in the annual financial reports.

Sources: Carr & Pearson, 2002; Carr & Smeltzer, 1997; Das & Narasimhan, 2000; Day & Lichtenstein, 2006; Ellram & Birou, 1995; Espich, 2004; Gleich, 2001b; Henke, Jahns, Blome, & Quitt, 2007; Kumar et al., 2005; Tan et al., 1999; Wagner & Weber, 2007.

potentials'. The measurement basics scored highest, but only with 3.9. This result supports the already drawn conclusion that measurement basics are currently applied, but their quality and degree of implementation are still sub-optimal.

- **Future state:** The evaluation of the future state frequently exceeds the ideal state evaluation. This reflects supply management's ambition and confidence in its own capability to perform change. Nevertheless, the question of the perception gap rises again, since the current status still shows the continuance of traditional patterns. It remains ambiguous if supply management really disposes of the urge to enforce change.

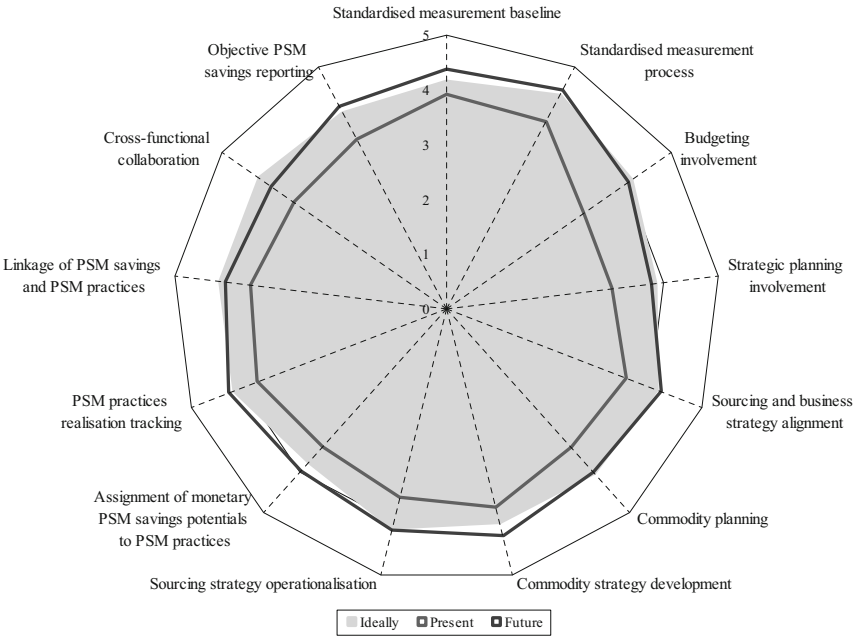

Figure 35: Measurement components – Comparison between ideal, present, and future state.

The component 'budgeting involvement' represents the one with the highest degree of change. Comparing the status quo with the future, an increase of 33% is planned, compared to the ideal even a 35% increase is indicated. Despite the low ideal ranking of 'involvement into strategic planning', its advancement from present to future of 23% scored second, as well as from present to ideal with 26%. This shows that the importance of supply management's budgeting participation has been recognised. Supply managers have realised the necessity of measuring their bottom line impact in the planning context. Interesting is the intended

development of 'cross-functional collaboration'; there is an increase of 22% indicated from the status quo to the ideal state, but only a 14% increase from present to future. This result suggests that increased collaboration with supply management's internal customers and the corporate level are evaluated to be very important (ideal = 4.2), but the potential to realise and implement it successfully (future = 3.9) is not given yet.

These observations lead to the conclusion that supply management has realised the need for change towards strategy and budget, but does not yet dispose of the necessary capabilities to perform this change. Thus, guidance in the form of an integrated budget effects measurement concept appears to be essential.

3.3.2 Dependence of Measurement Certainty on Specific Measurement Components

The characterisation and sequence of the different measurement components appear logical and comprehensive. The big picture is approved, but not which measurement components play a key role for improving measurement certainty. Thus, an excursion into evaluating the effectiveness of the single measurement components is taken.

The final goal is to obtain 100% certainty on the reported bottom line effective savings. This, however, will remain a theory due to room for personal measurement and reporting bias. In practice, measurement standards would need to be on such an enormous scale that they would no longer be applicable. Currently, in daily life, supply managers apply the Pareto principle figuratively: savings are reported with 80% certainty by only 20% measurement effort. However, as the previous discussion has shown, the organisation is not satisfied with this approach. This means that a compromise has to be found. As 100% cannot be reached technically, nevertheless, efforts have to be increased in order to improve the current average of 84% measurement certainty as indicated. The model to be tested – based on the status quo data – can be written as follows:

$$\textbf{Measurement Certainty} = \mathbf{b_0} + \mathbf{b_1}\,\text{Standardised Baseline}_i + \mathbf{b_2}\,\text{Standardised Process}_i + \mathbf{b_3}\,\text{Budgeting Involvement}_i + \mathbf{b_4}\,\text{Planning Involvement}_i + \mathbf{b_5}\,\text{Strategy Alignment}_i + \mathbf{b_6}\,\text{Commodity Planning}_i + \mathbf{b_7}\,\text{Commodity Strategy}_i + \mathbf{b_8}\,\text{Strategy Operationalisation}_i + \mathbf{b_9}\,\text{Potential Assignment}_i + \mathbf{b_{10}}\,\text{Plan Realisation}_i + \mathbf{b_{11}}\,\text{Savings Activity Linkage}_i + \mathbf{b_{12}}\,\text{Cross-functional Collaboration}_i + \mathbf{b_{13}}\,\text{Objective Reporting}_i + \boldsymbol{\varepsilon_i}$$

b_0 = constant, ε_i = remaining error, i = time

The **null hypothesis H_0**: None of the 13 proposed measurement steps will show a significant positive effect on the certainty of the measured bottom line effective savings.
The alternative hypothesis H_1 is: At least one of the proposed measurement steps will show a significant positive effect on the certainty of the measured bottom line effective savings.

Since the **coefficient of determination R^2** expresses how precise measurement certainty can be predicted by means of the 13 measurement components, it needs to be maximised to explain as much variance as possible (Backhaus, Erichson, Plinke, & Weiber, 2006, p. 66).

The multivariate regression model ($\alpha = 0.01$) explains 51.6% of the variance. Originally, all regressors in the form of the 13 measurement components were included in the model. Since the backward method was used, the regressors were gradually removed from the model, depending on their impact on the R^2 of the residual regressors. This process was finalised as soon as the removal of any additional regressor would have led to a statistically significant impairment of R^2.

Seven components appeared to be relevant, whereas only six of them added significantly to explaining the variance between the measurement certainty as independent variable and the statistical model (Table 3).

	Coefficients		t-value
	B	*Std. Error*	
Budgeting Involvement	0.157	0.057	2.751 ***
Planning Involvement	-0.072	0.051	-1.415
Commodity Planning	-0.130	0.052	-2.477 **
Commodity Strategies	0.154	0.056	2.761 ***
Realization Tracking	-0.123	0.055	-2.244 **
Savings Activity Link	0.202	0.056	3.624 ***
Objective Reporting	0.085	0.039	2.162 **

*** $\alpha = 0.01$; ** $\alpha = 0.05$

Table 3: The impact of the measurement components on the measurement certainty.

This, however, does not mean that the seven non-significant components are irrelevant for measuring supply management's budget effects. They are integral parts of the comprehensive measurement approach, which connects the different components like a puzzle or mosaic, in which all parts were proved to be necessary. Thus, if one is missing, the picture is incomplete and the result unsatisfactory. However, within each picture there are certain elements that play a central role: if a mosaic showing the 'Mona Lisa' missed the piece showing her smile, it would have a more disturbing effect on the viewer than a missing piece, say, at the bottom right corner. The same can be applied to the measurement process. There are certain components, functioning as the pillars for certainty on the final measurement results. However, the performance of these key elements depends on the functioning of certain support elements. These key components are highlighted in grey in Table 3. Only these four eventually show a significant as well as positive impact on measurement certainty. This result supports the alternative hypothesis H_1, and rejects H_0.

- **Budgeting Involvement:** Supply management needs to be involved in the budgeting process, since otherwise it is unable to obtain relevant budget data as a sound measurement baseline. *"Currently, there is no internal planning to adjust the budget […]; however, it is*

mandatory for the future", a respondent concluded. The relevance of this component is reflected through its highly significant positive effect on measurement certainty.

- **Commodity Strategies:** If the commodity manager has a comprehensive knowledge of the commodity market development, he reports with a unified voice – currently lacking within purchasing (KPMG, 2008, p. 10) – more precise prices to the budgeting parties. Supply management's proven competence and expertise, manifest in solid commodity strategies, will hence contribute to the degree of certainty of the reported budget effects.
- **Savings Activity Link:** This component shows the highest positive impact on measurement certainty. Today, savings are often called 'power point savings', assumed to be savings without substance. Confidence and certainty on the savings' substance can only be created through a cause-effect link (Ellram et al., 2002, p. 14) by demonstrating the savings impact of each performed savings initiative.
- **Objective Reporting:** *"Since the CFO is only interested in bottom line savings, their visualisation and reporting is very important for savings measurement"*, as quoted from a respondent. If the addressees of the savings reporting do not dispose of the measurement transparency, doubts regarding the credibility of the reported savings will arise. In making savings official, reporting is a critical element concerning savings certainty.

Briefly, referring to the negative impact in the case of 'planning involvement', 'commodity planning', and 'realisation tracking', plain planning or tracking, without being linked to an integrated measurement approach, just shows the effect of over-processing and is counter-productive to corporate efficiency.

Concluding, one respondent expressed that *"still the absolute savings figure prevails against the 'quality' of savings"*. Therefore, the design of an effective approach for measuring supply management budget effects should align all 13 steps into one complete and consistent mosaic picture and should thereby focus on the elaboration and accentuation of its identified four pillars.

3.3.3 Design Implications of the Survey Results for the Measurement Approach – A Second Draft of an Integrated Budget Effects Measurement Process

FROM 'HOMO ACQUIRENS' TO 'UOMO DEGLI ACQUISTI' – A LONG JOURNEY?

The initial draft of the budget effects measurement process introduced planning, realisation, and monitoring as the three basic steps for approaching solidly measured budget effects, which – in this thesis – were identified as the critical part of the numerator of the RoS formula. Based on the results and knowledge gained from the survey analysis, the initial draft with its three steps is concretised, as illustrated in Figure 36.

The idea of process based budgeting forms the major theme of this measurement approach to achieve transparency over all budget drivers and enable all budgeting parties to elaborate jointly on sustainable process cost reductions. In addition, the entire measurement approach has to be aligned with corporate strategy and objectives for focused targeting at the achievement of joint goals. The measurement process involves three budgeting parties: corporate as equivalent to top management and finance that eventually approves final budgets; internal customers as budget owners; and purchasing and supply management as the newly integrated budgeting partner concerned with all supply matters. There will be hierarchical differences between the three players. However, all three should be considered equal in terms of procedural involvement and knowledge distribution. The measurement timeline extends over three years: Business Year (BY) n-1 for the planning and budgeting of BY n; BY n during which the budget plans will be realised; and BY n+1 for the consolidated reporting.

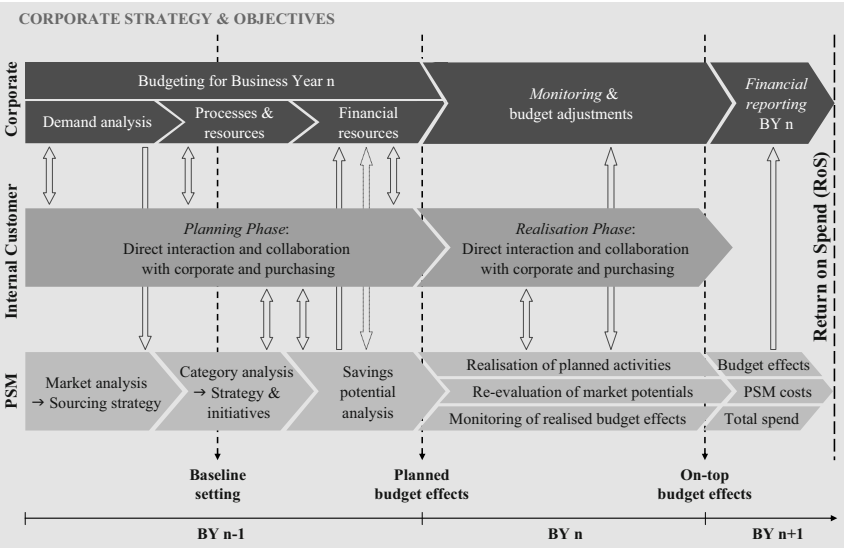

Figure 36: Second draft of an integrated RoS measurement approach.

The official process is designed to start with the corporate budgeting kick-off: the expected demand for final products, which has been analysed by marketing and sales, and the break-down figures for the different required product material, taking inventories into consideration, are communicated to and discussed with corporate for initial budget drafts. The results in the form of concrete figures for material to be purchased are communicated to PSM by the end of this demand analysis step. PSM can concretise its overall sourcing strategy, consolidating the

demand figures and the simultaneously conducted **supply market analysis**, and initiate its PSM internal **planning** process by communicating the sourcing strategy downstream for a focused elaboration on the single category strategies. At this process stage, the level of concretion regarding the required and planned material quantities is expected to be high. During the 'processes and resources' phase, internal customers and corporate jointly define requirements regarding the processes and resources, which will be needed to fulfil the planned demand. At this point of time – based on current budgeting patterns with the traditionally involved parties and established proportions of power – corporate and internal customers are expected to agree on an early budget based on the predicted quantities and previous or expected prices – the so-called baseline setting as the expected budget without PSM achievements included.

PSM's active **integration** needs to be initiated after this baseline setting the latest, when PSM is ready to enter the **budgeting** process on a category level in order to provide real-time cost information. PSM is involved in the budgeting discussion with the internal customer in the role of an expert for prices as well as technical category specifications from a supply perspective, based on its detailed market knowledge. In close interaction, internal customers and PSM elaborate on the improvement of the different processes and the prices based on concrete category strategies and savings initiatives.

As a result – entering the last planning phase – **savings potentials** are jointly identified between PSM and the internal customers. These outcomes are communicated to corporate for budget adjustments. Since there is the potential that further budget adjustments, even exceeding the planned budget effects, become necessary, top-down dictated, reciprocal communications between corporate, internal customers, and PSM are necessary before the final budget approval step between corporate and the internal customer. After this budget approval, PSM is able to have its **planned budget effects** signed by corporate as the first part of its entire bottom line impact already at the end of BY n-1.

In BY n, corporate needs to be primarily concerned with budget management: **monitoring** the compliance with plan and budget, initiating corrective actions in case of changed planning assumptions, and adjusting budgets in case of budget over- and under-runs.

In parallel, PSM and internal customers further pursue their close collaboration. PSM faces the challenge to **implement** its planned savings initiatives and to achieve at least the amount of the planned savings. Thereby, PSM needs to continue its supply market research to identify changing market conditions and the resulting effects on the planned savings potential early.

To provide proof for its achievements and their individual savings results, PSM needs to **track** the realisation of its planned initiatives. This linkage between the implemented initiatives and realised savings has been shown to be the critical part of the measurement

process. Not only does this cause-effect relationship need to be shown objectively, but also this tracking system must be linked to the corporate monitoring system to reach consistency and unambiguous results. During the entire realisation process, PSM needs to do the splits between meeting the expectations regarding planned initiatives and the efforts to accomplish on-top savings. Of course, on-top savings are desirable in general as they lead to even more savings than originally planned. However, they also imply inaccurate planning, especially if stating an ambition, with this modified budgeting approach, to accomplish a more efficient capital allocation from the beginning. Thus, on-top savings need to be tracked to analyse at the end of BY n the diverse realised savings, aiming at continuous planning improvement.

The final part of the RoS measurement process, comprises the **reporting** phase in BY n+1. Corporate is concerned with financial reporting, for which PSM also needs to deliver its financial value contribution in BY n. This consists of the realised budget effects, PSM organisational costs and total spend, which have also all been tracked and monitored during the business year. The RoS as a final financial KPI including all relevant information is eventually reported to corporate.

Since this measurement model has not yet faced immediate confrontation with real and direct practice needs, it assumes an ideal corporate setting: sequential process steps with clearly defined competences, universal validity for all categories and spend types, democratic budgeting processes with equal proportions of power, open communication, rationality, and full and transparent information. These assumptions resemble to a certain degree the assumptions of Adam Smith's 'Homo Economicus' model. Thus, the player within the measurement model – the supply manager, who proactively involves and jointly coordinates the measurement process – appears to be a 'Homo Acquirens', expressed in Latin as a supposedly dead language and ideally characterised by theory. However, Smith's model faces criticism from different sides, especially concerning uncertainty and bounded rationality in reality (Persky, 1995). Thus the question arises: **Will the 'Homo Acquirens' survive in reality?** To find this out, he needs to be taken to companies and tested in the real corporate context, equipping him with realistic features and making him an **'Uomo degli Acquisti'**, the realistic supply manager in Italian, as the supposedly spoken Latin.

Elaboration of Design Propositions

To follow the design research process, the construction principles need to be further elaborated to design propositions through the knowledge developed so far from the literature review and the survey.

For these purposes, the 'CIMO-logic', described by Denyer et al. (2008) is applied. These design propositions, which need to be field-tested to become design rules, prescribe which outcome O will be achieved through the mechanism M of intervention I in the context C.

Prescriptive design propositions can be regarded as a general template for the creation of solutions for a particular type of field problem. They cannot be tested and applied independently from each other, given the integrated nature of organisations. Therefore, design propositions cannot be expressed in short algorithms but are complex and elaborate (Denyer et al., 2008, pp. 395-396; Romme & Endenburg, 2006, pp. 288-289). Based on Construction Principles I-IV and the classification of the queried measurement components (Table 2), the following six design propositions, expressing necessary conditions and addressing the supply manager, are formulated:

Design Proposition 1 – Measurement Prerequisites:
(C) If inconsistent savings measurement practices and interpretations are noticeable, (I) define and communicate measurement prerequisites in the form of standardised processes and baselines (O) to create measurement certainty and to obtain comparable measurement results (M) through increased compliance.

Design Proposition 2 – Supply Planning:
If supply management expects to be integrated into corporate planning processes as an equally considered planning partner, establish comprehensive supply planning processes and communicate supply management's knowledge proactively to be corporately accepted as competent supply expert and cost challenger based on the recognition of its value-adding contributions to the identification and discussion of cost reduction potential.

Design Proposition 3 – Corporate Planning Integration:
If supply management claims its budget-integrated savings should be considered an official part of its bottom line impact, jointly analyse the process cost reduction potential, plan cost savings, and include them in the budgets to obtain savings transparency before budget agreement by integrating supply management systematically and early on in the budgeting process.

Design Proposition 4 – Realisation & Monitoring:
If there is criticism regarding the substantiality of the reported savings, consistently track and monitor the realisation of the plan to achieve transparency of the realised savings and their drivers through the direct link between the realised budget effect and its underlying saving initiative(s).

Design Proposition 5 – Measurement & Reporting:
If there is a lack of trust in the reported measurement results on the side of supply management's stakeholders due to ambiguous savings definitions and processing, clearly define and follow a fixed savings measurement and reporting approach, which coincides with supply management's advanced role perception, to obtain stakeholders' savings approval by

providing transparency of the applied measurement practices and access to comprehensible and unequivocal reporting guidelines.

Design Proposition 6 – Corporate Commitment:
If an established organisational structure needs to be changed for the implementation of the designed budget effects measurement concept, carefully analyse the driving cultural factors of the organisational system and elaborate on a system-adequate implementation process to create the basis for a sustainable implementation through supply management's motivation of becoming an equal business partner.

The validity and concretion of these design propositions – in the search from **'Homo Acquirens'** to **'Uomo degli Acquisti'** – are analysed through qualitative field-research.

3.4 Interim Result: Existent Need and Preparedness for Advanced Savings Measurement in Practice

This chapter focused on the analysis of the survey 'Measurement of Supply Management's Bottom Line Impact – Status Quo and Future Requirements', which was conducted in 2008 within German-speaking countries. The response rate of 23.5% can be considered as above average and indicates high interest in this topic. In total, there were 72 respondents, evenly distributed over industry, number of employees, and spend volume. Thus, the present results are assumed to provide a solid picture on current supply savings measurement practices in the queried region.

Figure 37 summarises the major survey results. The relevance of measuring supply management's budget effects could be approved from practice. It is *"most important for the success and reputation of the purchasing function"*, as one respondent indicated. Especially CFOs put great value on answering the question of supply management's corporate financial value contribution. However, well-developed savings measurement concepts – from the perception of the individual respondent – are not yet implemented in the majority of the companies. Obviously, the respondents realise the importance of this measurement issue but lack adequate measurement concepts.

In the process of designing an adequate budget effects measurement approach, 13 process components were elaborated and queried within the survey. These elements were grouped in four clusters: integration, measurement prerequisites, planning, and realisation, monitoring and reporting. Respondents evaluated almost all of the different proposed measurement components as at least relevant within an ideal measurement approach and indicated planned improvements on each of them in the future. It could even be shown that four components add significantly to an increased degree of certainty on the final savings measurement results: 'budgeting involvement', 'commodity strategies', 'linking savings to initiatives', and 'objec-

tive reporting'. Preparedness for change and improvement towards an integrated budgeting approach is apparently given.

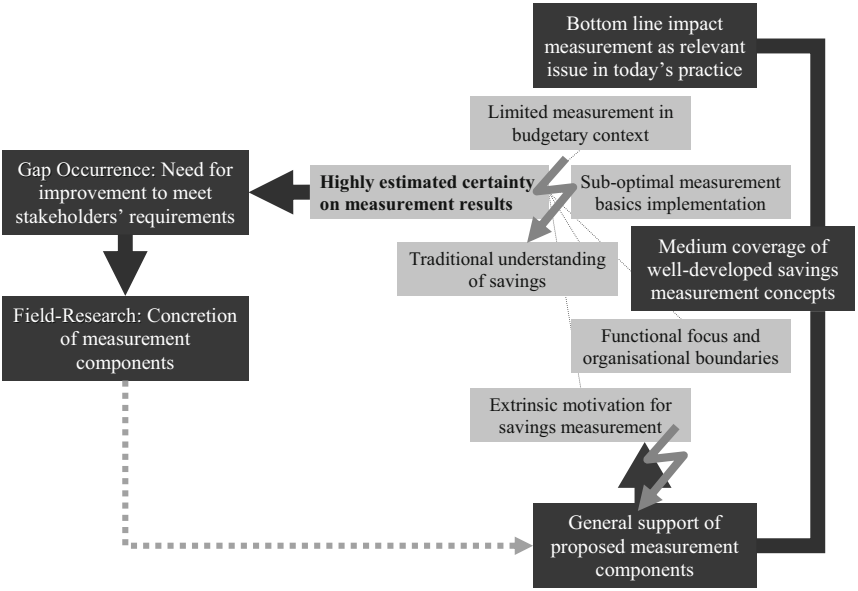

Figure 37: Status quo of savings measurement practices.

However, here the **first conflict** appeared: current measurement practices and attitudes imply constraints to a sustainable change towards more innovative and improved practices. Savings measurement is often still performed following top-down instructtions, rather than supply managers' intrinsic impulse to show their achieved success. Functional focus and organisational boundaries for cross-functional collaboration are noticeable, since the necessity for information exchange is often not seen yet. This fact is accompanied and partially driven by the still prevailing traditional understanding of savings: price savings rather than cost savings, an understanding which does not go along with supply management's supposed advanced self-perception. It keeps supply management from comprehensively showing its financial corporate value contribution. The situation that measurement basics, such as standardised measurement baselines and processes, are unanimously evaluated as major prerequisites, but not consistently implemented, shows that savings measurement practices still have some way to go before they reach required standards. Respondents almost unanimously agreed on the necessity of a consistent budgeting-integrated savings measurement approach, but at the same time disclosed limitations on implementation.

The **second conflict** appeared when these observations were combined with the information that on average there is an 84% certainty on the measured bottom line effective savings. This rather high percentage did not coincide with the above deficiencies and notions, and led to the occurrence of another perception gap: the personally biased perception of measured savings. Thus, current savings measurement practices still show remarkable room for improvement, especially regarding structure and consistency, but also concerning the corporate supply management mindset. In order to meet stakeholders' requirements towards the savings reports, supply management obviously needs to undergo some change and follow a transparent measurement and reporting process.

Based on these findings, the initial measurement process draft was further elaborated, stressing the planning process as the basis for solid measurement in particular. This process and the derived six design propositions need to be analysed and advanced further within field research to design a realistic solution for the measurement issue, in contrast to an ideal type of measurement process, which again does not support practice to overcome current measurement problems and perception gaps.

4 Measurement Process Design: Measuring Supply Management's Budget Effects – A Qualitative Approach

Finding creative problem solutions and thereby acting future-oriented as a vehicle for change, as discussed by several authors (e.g. Borja de Mozota, 2007; Lojacono & Zaccai, 2004; Michlewski, 2008; Ravasi & Lojacono, 2005; Romme, 2003), has been the reason for selecting design sciences as the research strategy for this thesis. The second draft of the savings measurement framework has already been detailed and incorporates the literature as well as practice perspective. However, it remains theoretical; or as Mintzberg (1979, p. 587) says: "It is the anecdotal data that enable us to do the building. Theory building seems to require rich description, the richness that comes from anecdote."

The existence and relevance of the problem of measuring supply management's RoS and budget effects has been proven. A generic measurement approach has been designed, expressed through six design propositions. However, to advance theory building and to provide more specific answers to more specific practice problems – to be more concrete – the framework must be validated and substantiated through qualitative data from practice. Thereby, it is the objective to substantiate the six so far developed design propositions and turn them into general design rules by achieving a higher degree of detail. The following research questions hence need to be investigated:

- Which contextual issues influence the budget effects measurement process in practice?
- How do the single measurement process steps have to be designed to take care of these contextual issues and to achieve reliable measurement results?

To answer these research questions, an exploratory research approach was selected. Yin (2003, p. 23) compares exploratory case studies with an exploration itself, which requires preparation and direction. This rationale is provided through the pre-defined measurement framework and the design propositions. By means of five different case companies, which were analysed with different methodologies, the practice context is investigated in 4.1. Which challenges companies face when trying to measure bottom line effective savings and which deficiencies occur are explored. The different contextual issues were allocated to the respective design proposition to approach those problem-focused. Thereby, it became obvious that there are process-related as well as organisational-related contextual issues. Since the latter apparently played a significant role in implementing the budget effects measurement process successfully in the long term, they are treated separately in detail in Chapter 5. In 4.2 and 4.3, which are dedicated to the first five design propositions, the entire budget effects measurement process is designed based on experiences and best practice obtained from discussions with practitioners and observations within the case companies. Each proposition

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is advanced into a design rule, which lists several possible interventions for supply managers to approach the contextual issue in order to reach their particular measurement objective. By applying this structure, the CIMO-logic is maintained throughout the entire design process. In summary, the design rules can be considered as guidelines for supply managers when setting up and eventually implementing a corporate measurement process for supply management's budget effects. This chapter concludes with the last draft of the measurement process design.

4.1 Contextual Case Analysis

It has become obvious that measuring supply management's budget effects evolves to become quite complex in practice and is not only about comparing two figures, but is about exceptions, outliers, mindsets, change, alignment – just to mention a few of the key concerns. Therefore, also the setting of methodology turned out to be complex: longitudinal participatory case study, for real-life experience, followed by focus group workshops, for discussing and validating the real-life experience, and finally two parallel single case studies for gaining even more independent insight and conceptual input. The reasons for choosing these methodologies and their interplay are explained in detail in 4.1.1. For the further concretion of the measurement concept design, contextual issues are of interest, which pose obvious challenges to the different case companies when measuring savings. An ideal measurement process should be able to handle and manage those issues and provide solutions. Therefore, for comparison reasons, the main units of analysis were the same for all five case companies: corporate savings measurement and reporting approach, supply planning, and the interplay between budgeting and supply planning. The contextual issues of the individual companies within each of the units of analysis are identified and explained in 4.1.2. In order to provide a structure and guidelines for the reader concerning the further processing of the contextual issues-information and the link from there to the ideal process design based on the cross-case analysis, a consolidation table is provided in 4.1.3 as a starting point for 4.2.

4.1.1 The Different, Applied Qualitative Methodologies

Yin (2003, p. 2) states that "the distinctive need for case studies arises out of the desire to understand complex social phenomena". Case studies are used in order to answer primarily 'how' research questions, focusing on contemporary events and not requiring control of behavioural events (Yin, 2003, p. 5). In addition, the "case study is a research strategy which focuses on understanding the dynamics present within single settings" (Eisenhardt, 1989b, p. 534). Eisenhardt does not define case studies as a method but as a general research strategy. Therefore, considering both statements, the three-fold research approach can be regarded as case study research in general, performed using three different methods, since the focus group workshops also contain in-depth discussion and analysis of different company approaches and

processes. The main difference between the three methods was the researcher's role, which will be discussed in detail below. Therefore, this argumentation can be concluded with Näslund (2002, p. 331): "A case study is more about the object to be studied than it is a methodological choice. It is an interest in individual cases – not an interest in the method per se".

Reasons for the Multi-Methodology Approach

To achieve valuable and meaningful results for the scientifically sound elaboration of design rules, three different qualitative methodologies were applied: a longitudinal, participatory single case study, focus group workshops, and two observational, parallel single case studies. Having elaborated the above process and general design propositions, the opportunity was given to advance and implement this approach within a corporate setting. This single case study marked the beginning of the qualitative research process (Figure 38). Since the scientist was actively involved in the corporate solution finding process – so-called action research (Rapoport, 2005, p. 25) – the results again faced the question of general validity and applicability. In addition, implementation issues have become apparent as a consequence of the change process, which was tasked concerning the existing measurement practices and patterns. Therefore, further research possibilities to solidify the obtained results were sought.

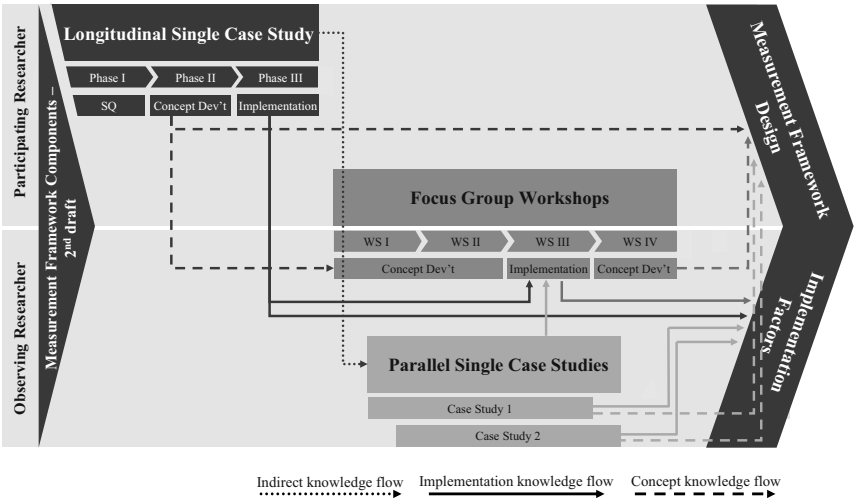


Figure 38: Overview of the interplay between the three different applied research methodologies.

Four focus group workshops were considered to be adequate. Within these workshops, the results from the longitudinal case study were presented and discussed with the corporate participants for validation reasons. In addition, the participants' individual approaches and processes were a major subject on this practice-academia platform. Thus, the longitudinal

case study results directly affect the final measurement framework and form the basis for the focus group discussions, whose results influence the final process design as well. The observations regarding implementation issues were elaborated correspondingly. Simultaneously to the focus group workshops, two observational, parallel single case studies were conducted. These case studies were not used for validation reasons, but to explore independently common supply management and budgeting practices for even more practice insight. However, at the beginning of each of the two case studies the ideas of the integrated measurement approach were presented for introductory reasons – causing an indirect knowledge flow. Since the two case study companies also participated in the third focus group workshop, there is a knowledge flow from the case studies to the focus group as well. The reasons for choosing this three-fold research process were the following:

1. **Longitudinal case study:** Getting direct insight into savings measurement practices through participative research, to experience personally the challenges and issues of concern for the further measurement process design.
2. **Focus group workshops:** To validate those findings through interactive focus group workshops and gather additional insights from practice.
3. **Parallel Case studies:** To obtain insight in common measurement practices as an independent observer and further enrich and strengthen the final savings measurement process design.

RIGOUR IN THE QUALITATIVE RESEARCH APPROACH

Certain aspects and stumbling blocks had to be considered while conducting case study research to overcome the weaknesses, such as unstructured analyses and lack of generalisability, which are often attributed to case study research (Harrison, 1997, p. 84). Yin (2003, p. 34) presents three different tests for exploratory case research in order to increase credibility and confirmability:

Construct validity: Construct validity is concerned with diminishing socially constructed and hence biased results, caused by the scientist's subjective perception and interpretation of the research object. Therefore, the tactic of **triangulation** helps to achieve construct validity (Skipworth, 2003, p. 115). Triangulation is "a process of using multiple perceptions to clarify meaning, verifying the repeatability of an observation or interpretation. […] Triangulation helps to identify different realities." (Stake, 2005, pp. 453-454). Based on Denzin (1978), Skipworth (2003, p. 116) explains four different types:

- Data triangulation – different sources for the particular data
- Investigator triangulation – different investigators interpreting the particular data
- Methodological triangulation – different methods for measuring the particular data
- Theory triangulation – different theoretical perspectives on the particular data

In this research process, the first three types of triangulation were applied. At least two of these types were always applied for validating the results obtained from each of the three methods. In addition, in order to diminish the criticism concerning single case-studies, which provide in-depth knowledge, but often not a strong base for theory building (Eisenhardt & Graebner, 2007, p. 27), the use of the three different research methods is already considered as methodological triangulation: one common research question is approached using different methods – in series and parallel order – to challenge intermediate results and formulate design rules as substantiated as possible, also contributing to an increased degree of external validity.

External validity: Concretises "the extent to which the outcome of a study […] in a group of instances applies (or can be generalised) to instances other than those in the study" (Dul & Hak, 2008, p. 47). In contrast to survey research, which aims at statistical generalisation, case study research targets analytical generalisation, in which a particular set of results will be generalised to some broader theory (Yin, 2003, p. 37). Therefore, **case selection**, leading to external validity, follows the so-called 'replication logic' rather than the statistical 'sampling logic'. This research strategy, thereby, followed the principle of 'literal replication' (Yin, 2003, p. 47), in which each case was selected to predict similar results, since the general validity of the six design propositions was already tested in the context of the large-scale survey.

Reliability: Demonstrates if the same research outcome is achieved, when another investigator conducts the same case study within the same corporate setting. It is the concern of reliability to minimise errors and biases within the study (Yin, 2003, p. 37). Therefore, documents as a **data source** were digitally **archived**. All interviews or workshops were audio-taped, as far as permitted. In cases where recording was not permitted, detailed minutes were taken. Another factor that influences the reliability of the results is the qualification of the corporate partners (Skipworth, 2003, p. 123). All involved practitioners were experts in the field of purchasing and/or finance or internal customers. Thus, the data were collected from knowledgeable corporate sources, since they were confronted by and experienced with these measurement issues in their daily business.

The Three Different Methodologies Applied Within Qualitative Research

Participatory, Longitudinal Single Case Study

This case study was quite broadly conceptualised – as initial practice contact – to elicit a comprehensive insight into the different practice areas that could have an influence on the overall process design. Thus, it functions like a pilot study for the subsequent case studies.

Research Question: How does the measurement framework – based on the six design propositions – have to be designed in detail to be feasible within this corporate setting?

Units of Analysis (UoA): The UoA were kept quite generic to capture as many issues as possible; too rigorous structuring at the forefront would have potentially led to the neglect of relevant issues from the beginning. Therefore, the UoAs were the following:

- Corporate savings measurement and reporting approach,
- Supply planning process, and
- Interplay between budgeting and supply planning.

These general UoA were refined in the course of research. These UoA and the refinement process were maintained for the other methods, for cross-case comparability reasons.

Case Selection: This case was selected because corporate purchasing expressed its need to show the P&L impact of its savings. Since the concept was not developed under certain premises related to industry, product, structures, etc., but with the intention to deploy it within any practice environment, only two selection criteria needed to be fulfilled by the first company: 1) corporate ambition to improve corporate savings measurement for the intrinsic motivation to participate in the research project, and 2) the approval to measure budget effects along the designed measurement steps to obtain valuable input for the further elaboration of the measurement concept.

Longitudinal Single Case Study	**Phase I**	**Phase II**	**Phase III**
Organisational Level	Business unit level	Business unit level	Corporate level
Content & Structure	Status quo analysis - Status quo analysis I concerning the UoA - Identification of special concept design issues → Next steps for concept pilot phase	Concept development - Joint design and pilot implementation of planning, realisation, & measurement steps → Fully elaborated savings measurement process	Analysis & implementation - Status quo analysis II concerning the UoA - Supported implementation of adjusted savings measurement process → Corporate roll-out
Scope of Analysis	Cross-category analysis	1 pilot category	3 pilot categories
Corporate Involved Functions	Purchasing, finance, internal customer	Purchasing, finance, internal customer	Purchasing, finance, internal customer
Researcher's Role 'Participant'	- Observer - Scientist	- Interacting moderator - Scientist	- Observer/Scientist - Instructor
Data Sources	Interview minutes, documents, field observations	Workshop minutes, documents, field observations	Interviews minutes, documents, field observations
Triangulation	←	- Data - Investigator - Methodological	→
Duration	5 months	5 months	5 months

Table 4: Overview of the structure of the longitudinal single case study.

Case Set-Up: As shown in Table 4, the entire case study lasted in total 15 months and was split into three phases, five months of duration for each phase, with breaks between the different phases. Three researchers with their individual research focus were constantly involved. The first two phases – the trial period – were performed on a business unit (BU) level. A status quo analysis of current savings measurement practices was conducted across several categories, investigating the roles and processes of the involved parties – purchasing, finance, and internal customer – to gain a solid picture about measurement gaps and contextual issues that have to be taken care of in the further process design to establish a solid savings measurement approach by the end of Phase II. In Phase I, research was observational, and as such also perceived by the company since mainly interviews were conducted. In Phase II, this changed and research became interactive and participatory. Process steps and tools for solid planning, realisation, monitoring, and measurement processes were jointly developed, based on the Phase I results within a workshop setting with the relevant functions. The scientists acted as workshop responsible, preparing and moderating the workshops in an interactive manner. Within Phase III, the developed measurement approach was supposed to be transferred to the other business units for three pilot categories from the direct, indirect, and project-driven area to be aware of all category specifics. Since another status quo analysis had to be conducted for these categories, the relevant contextual issues found in the course of the two status quo analyses will be treated equally in the discussion of the results, taking potential environmental variances into account. As a second step, the measurement approach was supposed to be implemented within each of the three categories to lay the basis for the company roll-out to follow. At the beginning of Phase III, the scientists played the role of the observer and changed into the role of an instructor, advising the category managers how to realise the new approach. During all three phases, recording was not allowed. Therefore, detailed minutes, field observations, and company documents were used as data sources, allowing solid method triangulation. In addition, investigator triangulation was achieved through the project set-up as well as data triangulation, since the different views of purchasing, finance, and the budget owner on the same data were always queried.

Limitations of the Research Design: Shortly before Phase III, a corporate purchasing restructuring programme was initiated. As a consequence, corporate purchasing partners already had to cope with this in addition to their daily work load, when the efforts expected from Phase III hit them. Their willingness to discuss and change in the context of the research project, and with it their easy accessibility as research partners were affected due to this priority shift, which eventually had a negative impact on the final results: the sustainable implementation of the integrated measurement approach, as designed in Phase II, could not be accomplished to the final degree as expected. Therefore, only data for the supply planning

phase could be collected during Phase III, as the realisation, monitoring, and measurement steps had not been reached.

Focus Group Workshops

"A focus group typically brings together […] qualified people for a face-to-face discussion of a particular topic" (Edmunds, 1999, p. 1). Fern (2001, p. 5) sees "creating, collecting, identifying, discovering, explaining, and generating thoughts, feelings, and behaviors [!]" as prevailing purposes of exploratory research. Focus groups are initiated e.g. for generating new ideas or testing new concepts. The group, composed of practitioners, gathers to identify issues, discuss them, and develop applicable and relevant solutions. Thereby, academia and practice interact and contribute to the solution process their thoughts and ideas (Calder, 1977, p. 356; Krueger, 1998, p. 20). With focus groups, it becomes possible to discuss and develop on the problem with several individual companies simultaneously, achieving a broader insight into practice-relevant issues and founding the measurement concept design on a more general and not sector-specific basis. This group energy distinguishes focus groups from traditional interviews (Berg, 2009, p. 124).

Research Goal: To discuss on an open platform with practitioners their current savings measurement approaches and issues, and simultaneously receive feedback on the validity of the – within the longitudinal case study – further elaborated measurement process, i.e. to establish an open knowledge exchange between theory and practice.

Units of Analysis: The same UoA as for the longitudinal case study; in addition, the issues the participants face(d) during implementation.

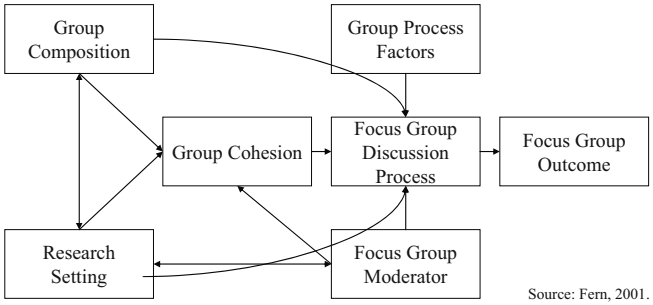


Figure 39: General focus group process framework.

Case Selection: A focus group is considered effective if participants share their knowledge and ideas in open, transparent, and constructive discussions. Therefore, it was aimed for heterogeneous homogeneity, i.e. participants with diverse backgrounds and characteristics targeting at one common objective. Due to a participation fee, the focus group was composed

solely of companies that were highly interested in the cross-company and research knowledge exchange on savings measurement approaches.

Focus Group Set-Up: The conceptual framework of a focus group consists of seven factors (Figure 39), which are directly interrelated and only partially controllable by the scientist. The focus group consisted of four workshops – one workshop per month – which were composed of the same participants at each workshop. The thematic focus altered each workshop along the measurement approach, as can be seen in Table 5.

Focus Group Workshops	Workshop I	Workshop II	Workshop III	Workshop IV
Content & Structure	Status Quo › Introduction of the elaborated savings measurement framework › Corporate presentations of current savings measurement approaches	Planning › Corporate presentations of current supply planning approaches › Introduction of the findings from the longitudinal case study › Joint approach towards an ideal integrated planning approach	Implementation › Presentation of concept requirements derived from the longitudinal case study › Joint discussion of requirements and inhibitors of the integrated measurement approach	Integration › Corporate presentations of current realisation and reporting approaches › Introduction of the findings from the longitudinal case study
Scope of Analysis	Corporate view	Corporate view	Corporate view	Corporate view
Corporate Participating Functions	Purchasing & finance	Purchasing & finance	Purchasing & finance	Purchasing & finance
Researcher's Role 'Participating observer'	› Interacting moderator › Observer	› Interacting moderator › Observer	› Interacting moderator › Observer	› Interacting moderator › Observer
Data Sources	Workshop minutes & corporate presentations	Workshop transcript, corporate presentations, & group work notes	Workshop transcript, presentations, group work notes, & questionnaire	Workshop recording & corporate presentations
Triangulation	◂	› Investigator › Methodological	› Investigator › Methodological	▸
Participant structure	German & Swiss	German & Swiss	German, Swiss & UK	German & Swiss
Duration	1 day	1 day	1.5 days	1 day

Table 5: Overview of the structure of the focus group workshops.

The workshops were designed as a combination of academia presenting latest knowledge on the particular savings measurement issue, the participants presenting their status quo, and joint group work. Three large international companies formed the key focus group participants, which were accompanied during the third workshop by two further large companies. Each company was represented by at most two persons with a purchasing or finance background or both. Therefore, the biggest setting was six people, which classifies it as 'mini group' (Greenbaum, 1998, p. 3). The scientist functioned as moderator, knowledgeable expert, and discussion partner. Thus, this role can be described as participating observer: participating when presenting and contributing to discussions, observing when moderating the discussions. The group cohesion was not only established through the balanced interaction between academia and practice but also through so-called 'knowledge preparation' between

the workshops, to keep the link for the participants even between the workshops and to guarantee structured workshop progress.

Since two scientists were always present during the workshops, investigator triangulation diminished biased results. By means of workshop transcripts and minutes, corporate presentations, group work notes, and even a questionnaire, as multiple data sources, methodological triangulation was established.

Limitations of the Research Design: Two out of the three participating companies are active in the Fast Moving Consumer Goods (FMCG) sector. It became apparent in the course of the workshops, that these two companies are largely concerned with measuring savings in the operational expenditure (OPEX) area. The third participant, however, active in plant engineering, was primarily interested in measuring savings in the capital expenditure (CAPEX) area, which, due to largely varying planning periods and approaches, cannot directly be measured using the same approach as OPEX. Since the participant could hence not contribute significantly to the discussions over the entire period of the focus group, the remaining part of this thesis will only consider the findings from the two OPEX-driven companies, neglecting CAPEX-savings measurement and considering it as a topic for future research.

Two Parallel Single Case Studies

The purpose of conducting these two case studies was to gain insight into current savings measurement issues from an uninvolved and observing perspective, not discussing in detail and validating the previously designed measurement framework, but to gain potentially new and additional knowledge, which has not been considered before.

Research Question: How can supply management be integrated into the corporate budgeting process to gain the possibility of showing its cost reduction achievements even before their offsetting in the budgets?

Units of Analysis: The UoA stayed the same as for the other methods. They were split and attributed directly to the interview partner, corresponding to his field of competence.

Case Selection: For comparability reasons, the two case companies were selected from the FMCG industry as well. To obtain the most valuable insight, the one company chosen, considered itself as advanced in its savings measurement practices, whereas the second company had just initiated the realisation of its plan for improved savings measurement. In both companies the ambition for further savings measurement improvement was provided, which shows direct commonality with the other case companies.

Case Set-Up: Three interviews were arranged with each case company, with equal interview structure. The first interview, the introduction, was composed of a brief, general presentation

of the designed measurement approach, primarily as preparation for their participation in the third focus group workshop.

Parallel Single Case Studies	**Interview I**	**Interview II**	**Interview III**
Content & Structure	Introduction › General presentation of savings measurement approach › Feedback and individual comparison › Open discussion on corporate measurement approach and issues	Budgeting Process & Purchasing Integration Units of Analysis: › Budgeting process › Purchasing's role in the budgeting process › Integration of planned savings in the budget › Savings definition	Supply Planning & Budgeting Integration Units of Analysis: › Supply planning (directs vs. indirects) › Purchasing's role in the budgeting process › Savings measurement & reporting
Scope of Analysis	Corporate	Corporate	Direct & indirect categories
Corporate Involved Functions	Operations finance (Case 1) (+ purchasing in Case 2)	Operations finance	Purchasing
Researcher's Role 'Observer'	› Presenter › Interviewer	› Interviewer	› Interviewer
Data Sources	Interview transcript & documents	Interview transcript & notes	Interview transcript
Triangulation	◄	› Data › Methodological	►
Interview Structure	Unstructured	Semi-structured	Semi-structured
Duration	2 hours	2 hours	2 hours (Case 1) 1 hour (Case 2)

Table 6: Overview of the structure of one single case study.

The initial interview was unstructured, in order to gain a broad first impression on the status quo and the savings measurement issues within the particular company. By means of unstructured interviews, the least biased view concerning the identification and solutions of relevant measurement issues and practices was expected to be gained. The second and third interviews were conducted with the operations finance and purchasing responsible respectively and were semi-structured for comparability reasons. The points of interest for this interview are shown in Table 6. Following these general UoA, a dialogue was established between the scientist and the practitioner, in which ad hoc points of interest were determined, based on commonalities with or differences from the other cases. Data triangulation in this case was obtained through the separate interviews with purchasing and finance, covering almost the same issues. Methodological triangulation was rather hard to accomplish, since the companies were very strict about document release.

Limitations of the Research Design: There was no interview with an internal customer possible since the budgets in both companies are located on local market level. Thus, no

budget holder was accessible in the central headquarters where the interviews took place. The findings from the case studies, hence, do not consider the internal customer's perspective.

In the subsequent analysis section, the focus of analysis is set upon the measurement related issues and the company-specific approaches that contribute to the measurement process advancement. Thus, the results of the interaction between academia and practice take centre stage, rather than the interaction itself. After having explained and distinguished in detail between the different methodologies and following the conclusion that all of them can be subsumed under case study research, their individual findings will be analysed irrespective of their methodology.

4.1.2 Identification of Contextual Issues in Practice to be Aware of in the Further Concept Establishment – A Contextual Exploration

To formulate design rules – what to do to achieve a certain outcome – corporate context has to be explored. Issues and concerns, which are present in the savings measurement practice and require special care to facilitate savings measurement, need to be identified. Thus, in this section, not the general setting of the five case companies is in the spotlight – telling the chronological case story – but the company-specific challenges – the so-called contextual issues, indicated by (◈) – towards an improved savings measurement within the different UoA – creating the contextual framework for the design rules. The different contextual issues are identified and discussed based upon the comparison with the theoretical target process, as outlined in the previous chapters. Since the longitudinal case study was an in-depth corporate analysis done by the author herself, its contextual issues will notably exceed the level of detail of the information obtained from the practitioners in the context of the two other methods. Due to market competition and confidentiality reasons, all five case companies had to be disguised. Therefore, no sensitive details on corporate figures and processes will be mentioned.

PHONECO – A TELECOMMUNICATION COMPANY (LONGITUDINAL, PARTICIPATORY CASE STUDY)

PhoneCo is a listed, international provider of modern information technology and telecommunication services. Its top management realised that purchasing reported significant savings each year, which were perceived as 'power point savings', since they were achieved within a decreasing market price environment, derived from a non-budget-linked measurement tool, and had hence no impact on the internal customers' budgets, which remained unchanged over the years. As a consequence of this situation, PhoneCo – under pressure from its CFO – required a new, more transparent savings tracking and measurement approach.

During Phase I, PhoneCo's purchasing department was structured as follows: corporate purchasing was led by the overall purchasing responsible, concerned with corporate purchasing

strategy, systems and global category and supplier coordination. In addition, each of the four business units worked independently with their own head of purchasing in the strategic as well as operating field, down to market level. There was no joint work on a cross-business unit level regarding purchasing practices. This corporate setting remained unchanged during Phases I and II. Phase III, however, was affected by the change of head of corporate procurement, who initiated a corporate procurement transformation programme. This programme incorporated the establishment of global categories. The individual global category leaders became responsible for the sourcing and management of the entire category across the different business units, irrespective of the prior separation (Figure 40). Purchasing changed from a business unit focus to a global category focus, supporting the corporate vision of acting as one global company.

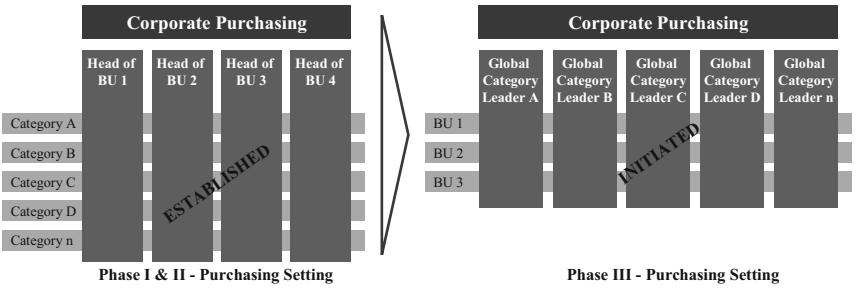


Figure 40: Change in the organisational setting of corporate purchasing between the phases.

The aim of this high-priority transformation programme was to gain, as procurement increased corporate visibility, reputation in terms of corporate value contribution, which should be established through noticeable efficiency improvements. Procurement's tasks were split into strategic versus tactical sourcing. Strategic sourcing was responsible for gaining category expertise through solid category management and in this context, to show the functional added value to the company, also in the form of delivered budget effects. Thus, the global category leaders were expected to be highly cooperative in the research project, as efficiency gains and savings transparency were part of their target agreements.

Corporate Savings Measurement and Reporting Approach:

PhoneCo defined purchasing's **value contribution** as the sum of cost reductions (CR) and financial benefits (FB): *CR1 & CR2 = (Baseline – Negotiated Price) * Actual Volume*. **Cost reductions** were thereby divided into two different types due to different baselines: CR1 expressed savings for recurring purchases, which were bought during the last 48 months; CR2 expressed savings for non-recurring purchases, either an initial buy or the last purchase was ordered more than 48 months ago. The best quotation prior to negotiations was taken as the

CR2-baseline in this case. Thus, there was the chance for the purchaser to increase savings by demanding an overrated best quotation (contextual issue: ◈ Biased baselines). Since there were no further definitions for cost avoidance or savings against budget, market movements could not be pictured, which hampered the direct comparability of purchasing's performance. Planned budget effects, especially dependent on purchasing's planning integration as described below, could not be shown either (◈ Missing definitions for certain cost savings types).

Financial benefits were additional types of savings, such as reductions in process costs or overheads. In order to report FB as part of the savings, special approval from management accounting was necessary. Since there were no further calculation guidelines available, the following statement was often heard from the purchasing side: *"To be honest with you, actually we do not consistently track and report financial benefits, since they are too vague for management accounting to be approved as official saving"* (◈ Focus on price reductions). Due to individual freedom of judgment regarding the classification of recurring or non-recurring spend, a grey zone emerged, especially for long-term and frame contracts (◈ Ambiguous savings dimensions).

PhoneCo's savings were measured by means of a **value contribution measurement tool**. The data could either be drawn from the SAP-system (90% of the required data entries), or entered manually. Since either way, the purchaser had to enter the achieved value contribution manually, room for potential biases was still given, even within the automated version (◈Ambiguous savings reporting system). It was purchasing's task to insert the negotiated savings into the tool. The further processing of the savings was unknown and irrelevant for purchasing. By the end of the year, the system reported all totalled savings, based on purchasing's autarkic negotiations coupled with the released quantity. However, the savings initiatives and their outcome could neither be tracked nor monitored with this tool: *"There is no documentation of the charged cost centre when triggering the value contribution measurement"* (◈ Ambiguous savings tracking).

Since the savings were reported depending on the time of retrieval, the end-of-year savings had no clear period-relation, since savings recorded this year could already have been negotiated 18 months ago as a framework agreement (◈ Lack of business-year savings relation). As a consequence and for simplicity reasons a general conservative view was taken on the bottom line effective **savings report**: 50% of the total savings were considered and reported as bottom line effective. In addition, negative price developments were not taken into account, which led to a biased picture of purchasing's performance, since in progressive understanding, purchasing is supposed to act entrepreneurially, which also includes taking responsibility for negative effects (◈ No reporting of price increases).

The value contribution measurement tool was implemented on a corporate level, but customised within each business unit. As the global category structure was introduced, requiring transparency across all business units, the lack of aligned and equal tools posed major obstacles (◈ Inconsistent and unaligned savings measurement systems).

Supply Planning Process:

'**Global Procurement Policies**' formulated roles and responsibilities: *"It is the role of purchasing, to efficiently and effectively purchase goods and services for internal as well as external customers […]. Thereby, it is essential that purchasing is early involved in product specifications and sourcing planning processes."* The focus lies on the act of purchasing as the purchaser's key competence to contribute to corporate value; strategic roles and responsibilities were not clearly outlined (◈ Operating view on purchasing – corporate perception).

Going further, and investigating the **purchasing strategy** on a business unit-level, a supply vision was provided: '*Elaborating the leading position within the competition*'. To the extent to which access was granted, no direct link either to the overall corporate strategy, or to the corporate purchasing strategy was noticeable. The strategy was structured in different fields of action, e.g. purchasing performance. Besides the aim of optimising product cost as well as purchasing process costs among others through integration in the corporate planning and product development processes, there was also a draft of a high-level measurement approach for the real budget impact (Figure 41), but no concrete roles and responsibilities.

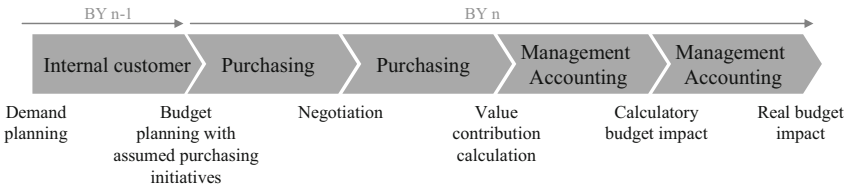


Figure 41: The theoretical budget impact measurement process on business unit level.

The value contribution measurement tool was indicated to be an adequate support system. The experiences from the interviews on category level even strengthened the impression: on the strategic level, the abstract idea and aim of measuring purchasing's budget effects was present. The implementation on the operating level, however, was not achieved, since tools and mindset were not aligned with the high-level strategy (◈ Inconsistent top-down strategy implementation). For the two explored direct material[2] categories, there was no implemented **category strategy** or structured **category planning process** in place. One of the category

[2] Direct material, e.g. raw material, semi-finished goods, etc., become part of the final product. Whereas indirect materials do not become part of the final product, but support the corporate process, e.g. office equipment, travel, consultancy, etc.

managers said: *"There is no strategy for my category, just an unsystematic information exchange between me and the internal customer, when he needs price information. Perhaps there is one on a subordinate category level."*

In both categories, **purchasing initiatives** were discussed face-to-face on behalf of the internal customer (◈ Lack of consistently operationalised category strategies). *"The internal customer comes in case of new demand or delivery shortages. He is the process owner of all strategic activities concerning his project and the affected categories."* Resistance could even be noticed as reaction to the suggestion of developing a category strategy systematically in the future, since *"purchasing will not take any responsibility as a consequence of its planning assumptions for market development"* (◈ Purchasing with reactive and operating role perception).

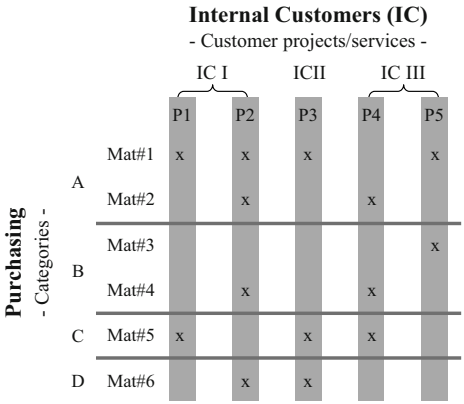


Figure 42: Purchasing-internal customer alignment and transparency.

The purchaser acts within his category on material number level, whereas the internal customer acts on project level, which comprises several categories (Figure 42). Thus, the internal customer plans the demand for projects, whereas the purchaser coordinates material numbers, a **planning granularity** which is too high for the internal customer, who generates the required quantity of the different materials automatically within his planning system (◈ Different, cross-functional planning granularities). He just needed on demand the updated material prices from the purchaser, nothing else. This was shown by an internal customer's comment on the question to get insight into last year's budgeted prices on a material number level: *"I am sorry, but I wouldn't even know where to look for them."* (◈ Lack of data transparency). Therefore, the purchaser was not able to get the planned demand volume for his category early in the planning period, since this analysis was undertaken last at the beginning of the business year. For complex projects, such a detailed Bill of Material (BOM)

was not even elaborated on a category level. Consequently, the purchaser did not know all his relevant partners with their specific needs and was hence forced to do a random job based on last year's estimations (◈ Missing link between customers' needs and purchasing expertise). Statements like the following resulted from the above circumstances and confirmed the traditional **self-perception** and perception by others: *"The purchaser is operator and not planner – what he does is not planning, but reviewing."* He accepted his role as material price provider and was not interested in how the price affects the budgets – *"This is not part of my responsibility"* (◈ Lack of cost awareness).

It was his responsibility to negotiate prices and achieve savings during the year – his only recognised and rewarded value contribution (◈ Lack of recognition of budget included savings). This was how his personal **incentives** were designed: on-top savings exclusively (◈ Mismatched incentive system). From the purchaser's perspective, there was no real purpose to becoming a technical expert if he was not involved in the early technical discussions anyway. It became a vicious circle. *"Structural cost analysis? I think we did one several years ago."* Purchasing had no incentive, especially concerning non-complex categories with routine demand, to strengthen its technical expertise (◈ Lack of purchasing expertise). The internal customer, hence, did not realise the added-value of integrating purchasing, which was counteracting to purchasing's motivation for emancipation. The statement *"I think there are some scenario analyses for my category done by marketing. However, I don't have access to them"* conveyed the worst consequence for purchasing in a competitive setting: passiveness and lack of motivation. Therefore, purchasing of these investigated direct categories was **unsystematically involved on demand** to provide updated material prices without precise knowledge about the planned volumes (◈ Unsystematic and one-sided collaboration). As a consequence, the budgets were based on imprecise assumptions. These two direct categories had great prerequisites for sound supply planning: manageable amount of internal customers and suppliers, recurring spend (regularly supplied), and core material (easily predictable). If one of them is not given any more, planning is confronted by challenges.

In contrast to direct material, whose volume is planned upon expected sales, **indirect material,** e.g. travel service, faced additional issues:

- Budgets were spread across many cost centres and hence the total demand volume was not collectable (◈ Great amount of internal customers), which led to the perception that
- Indirect budgets were too small compared to the direct ones and planning efforts were mistakenly considered as irrelevant (◈ No category strategy relevance for indirects);
- Demand, was often unpredictable so that solid supply strategies based on volume could not be accomplished (◈ Unpredictability of demand volume), and hence
- Indirect budgets were often allocated as overall volume based on last year's data for simplicity or political reasons (◈ No price-quantity budgets).

Another contextual issue was discovered within the newly formed global category for sourcing innovative product designs, for which the customer-purchasing setting was entirely different from the above explanations. The creation of **transparency** across this recently formed **global category** was the prime task of the newly installed global category manager. There was no corporate transparency of all the material numbers and sub-categories that belong to this global category (◈ Incomplete category overview). Thus, before talking to the internal customers, purchasing itself first had to gain internal transparency and define the scope of the category precisely to capture all different synergy effects and to avoid double-responsibilities and counting.

Interplay between Budgeting and Supply Planning:

In none of the investigated categories was purchasing integrated into the budgeting process. In the **corporate budgeting handbook** there was one out of more than sixty pages about the importance of purchasing's integration into the budgeting in the form of accurate provision of price information, without clear process pattern about purchasing's precise involvement (◈ Lack of top-level support). As a consequence, purchasing was not actively integrated on the operating level.

Thus, the only possibility to achieve visible bottom line savings was during the year on top of budget. Looking at direct material, this was thought to be straightforward due to the given price-volume logic. However, also in the case of direct material, an area in which savings should directly hit the bottom line, savings were reinvested: *"The internal customer's budget consists of several direct material cost centres. If the budget for one material is spent, he can internally shift budgets, since there is no fixed budget allocation."* Efforts were booked to different budgets in order to hit the budget – a kind of internal **'budget floating'** process. The debit balance would have had budget cuts as a consequence. In the case of credit balance, the internal customer would be held accountable for financial mismanagement. Thus, hitting the forecasted budget was the overall aim. These budget shifts were performed regularly during the year in parallel with the forecast, without the direct involvement of purchasing. If purchasing achieved a saving during the year, these prices were considered in the forecast and the budget shifts, and hence did not reach the bottom line since no official and traceable budget adjustments were performed (◈ Unofficial savings reinvestment).

This intransparent **savings reinvestment** issue played a significant role for indirect materials. Since indirect services were often not based on a precise price-quantity plan, not even management accounting was able to track those budgets. Management accounting had transparency of the budget for indirect services, but how this amount was actually used even on a sub-category level, was out of their scope of control (◈ Different, cross-functional planning granularities). Therefore, purchasing did not have the authority to claim budget

compliance and transparency from the internal customer on category level and was hence not able to track bottom line effective savings on top of budget.

One major reason for this lack of authority, which was observable through all the explored categories, was the fact that purchasing only reported material prices to the budget owners. There was no transparency on the true **effects of the purchasing initiatives**, i.e. if the price reductions were based upon purchasing's efforts or realised in the course of a positive market development. Not even purchasing tracked the realisation of their planned activities: *"Shall I keep a diary?"* (◈ Ambiguous savings tracking). Thus, it happened that purchasing reported externally caused savings as personal achievement leading to a biased presentation of it functional efforts.

As a consequence of **internal customers'** freedom regarding their budget management, they were rather **opposing** the idea of integrating purchasing, perceived as an additional player with different interests, into the budget planning process: *"Significant savings at the end of the business year are not really welcome to us, considering the required budget hit rate."*. The problem, however, arose when even **management accounting** was not eager to achieve more precise budgets: *"It cannot be precluded that buffers are integrated into the budgets in order to activate them if required"* (◈ Corporate resistance to purchasing's integration). Such a top-down budgeting approach did not facilitate procurement's budgeting integration and planned budget effects measurement, since it was of no relevance for the management how these top-down budget cuts were substantiated, as long as the budgets were cut (◈ Top-down savings targets).

Considering the **project-driven category**: The fact that the category manager worked for the one business unit, which was said to be more dynamic and modern, also showed its effects on the purchasing-customer relationship. They were closely cooperating on a systematic and permanent basis to jointly launch new product designs, in contrast to the direct categories (◈ Different levels of expertise and standards). Solid planning, however, was not done since this project- and innovation-driven category was largely **unpredictable** (◈ No planning certainty in innovation-driven categories). The launch of projects was often decided ad hoc during the year, however, without explicitly defining the end product. If, in the middle of the year, other projects gained priority, budgets were shifted and purchasing and its other involved business partners had to cope with that, since in this environment the name of the game was flexibility, with marketing as the leader. *"In my category there still is the gold-rush mood...pure creativity!"* For this category, there was the clear rule that purchasing is involved for technical issues; however, as with the other categories, budgeting was not part of purchasing's scope of competence (◈ Lack of corporate budgeting integration).

BEAUTYCO – A FAST MOVING CONSUMABLE GOODS COMPANY (FOCUS GROUP)

BeautyCo is internationally renowned for its skin and beauty care products. The company initiated a corporate restructuring programme to remain competitive, trying to establish a global organisation. The implementation of a central procurement structure and the introduction of cost awareness and performance management, requiring a mindset change, were the biggest challenges which procurement controlling was facing at this time. As a consequence of BeautyCo's success, it had previously not been used to focus on cost, but rather on revenue (◈ Lack of cost awareness). This situation, however, had changed due to tougher market conditions. It became the mission of the head of procurement controlling to elicit a corporate procurement overview, create transparency, and implement an adequate supply performance management system. Since BeautyCo had transparency on cost and savings to a certain degree, but was not systematically integrated in the budgeting process and not able to link budget effects to cost centres (◈ Lack of corporate budgeting integration), its aim was to develop a corporately aligned and simplex, rather than complex savings measurement model. The answer to the question for the existence of a perception gap within BeautyCo was the following: *"It is definitely existent. Procurement's expectations to integrate itself actively in strategic processes are counteracting with the still existing traditional understanding of being a commodity buyer who only reacts to demand"* (◈ Different levels of expertise and standards). *"General management has the expectations and procurement management the ambition to change this traditional image, but operating procurement has not fully joined the movement yet"* (◈ Inconsistent top-down strategy implementation).

Corporate Savings Measurement and Reporting Approach:

◈ Focus on price reductions: BeautyCo distinguished between five different kinds of savings: resulting from price variance, index variances, quotation variances, negotiations, and specification changes. The latter included the so-called process cost reductions and made only 10% of the total amount of annual reported savings, despite procurement management's emphasis on them, as they advanced procurement's technical expertise.

◈ No reporting of price increases: BeautyCo only reported realised positive price developments in the form of price reductions. The tracking and reporting of negative price developments were too complex, confusing the responsible operators and management with their meaningfulness. Therefore, BeautyCo also reported biased savings results.

◈ Ambiguous savings dimensions: Part of the differentiation between recurring and non-recurring spend was based on personal perception by the internal customer and was hence ambiguous. If the value of the good was perceived to be the same, it was a cost saving, otherwise cost avoidance.

◈ Inconsistent and unaligned savings measurement systems: Procurement had developed a reporting cockpit, which however was not able to link the achieved savings directly to the different cost centres and their SAP reporting. Thus, no budget link could be established.

Supply Planning Process:

◈ Great amount of internal customers: For direct material, systematic planning approaches were in place and integrated, as well as savings measurement and monitoring processes. 80-90% of direct material was planned on a central level, whereas indirects were mostly planned on a local level, which *"adds a lot of complexity regarding targeting, consolidation, alignment, etc."*. This level of opaqueness for indirects led to a corporate inconsistent degree of category and savings transparency.

◈ Corporate resistance to purchasing's integration: *"Why do I need to go to sourcing in advance to tell finance afterwards that I will need less money? For marketing, there is no advantage, only for the CFO, the board, and the company reaching EBIT targets. So the motivation for marketing is zero."* If the internal customers had to start to cooperate with procurement, their initial fear was budget cuts. This eventually led to resistance to procurement's open and systematic planning integration, not only in the indirect area.

◈ Unpredictable price developments: Procurement received top-down savings targets, which needed to be realised. However, those could often not be systematically substantiated with concrete category strategies, due to volatile procurement markets.

◈ Lack of consistently operationalised category strategies: Apparently, there was no confidence and credibility in the integration of planned savings, since they were not yet manifest. Part of the reason for this corporate attitude might be the lack of consistent strategy operationalisation and realisation through concrete activities and directly assigned savings potential. The strategies were not visibly and tangibly aligned with the later performed initiatives.

◈ Parallel and separate planning processes: Supply chain planning, including procurement, was performed independently of sales planning. *"They actually do it on their own and don't correspond before the financial plan."* Procurement did not get hold of the planned volumes early in the planning period and based its price calculations, which eventually were demanded from the budgeting parties, on the previous year's experience and self-made volume assumptions.

Interplay between Budgeting and Supply Planning:

◈ No official corporate budgeting documentation: BeautyCo did not dispose of any official documentation about the corporate planning processes. There were no guidelines, which showed the process, timeline, its players, milestones or deliverables and which purchasing

could have used for the sustainable definition and illustration of its involvement and interface with the corporate budgeting process. Since there was no officially documented budgeting process, procurement was unable to position itself within it.

◈ Different cost calculation standards: A mandatory standard price was developed, which reflected, on basis of planned prices for recurring demand, the cost of sales for the following business year. Each affiliate had to use it to elaborate its net sales and cost of sales. Since it was developed in the early budgeting stages, it was based on rough price assumptions from procurement. However, procurement, as part of the supply chain, advanced the supply chain plan based on updated prices. Therefore, production centre planning within the supply chain plan was free to deviate in its plans from the standard as long as they fulfilled the targets provided in the briefing. *"Between the sales and supply chain plan there can be a gap. However, in total it has to reflect the targets."*

◈ Operating view on purchasing – corporate perception: *"Procurement centrally negotiates procurement prices and gives them to the production centres and they work with it. Not meaning that they are taken unchanged"*. Procurement delivered the relevant prices on demand, however, was not actively integrated into the budgeting discussions and decision making process – no equal business partner yet.

◈ Unofficial savings reinvestment: Procurement did not have any transparency on the processing of its on-top savings during the year. *"If during the year, you have […] a saving, there might be a discussion what to do with the money. […] If finance says, we don't know because we don't have the transparency, it could happen that the whole thing is reinvested instead of delivered to the bottom line"*. Procurement did not dispose of the authority to claim these savings as bottom line effective or take them through an official budget re-allocation process.

◈ No price-quantity budgets: This issue of intransparent reinvestment is of major importance for indirect services, whose budgets are often not based on a price-quantity approach, but e.g. for marketing on a fixed percentage of sales. Therefore, neither planned budget effects can be realised within these categories, nor can on-top savings be made bottom line effective through consistent tracking and budget cuts or official re-allocation.

◈ Lack of top-level support: A small group within procurement was formed, which claimed the re-design of the corporate planning processes. This, however, has not become a corporate issue yet, since all traditional budgeting parties fear an increased degree of complexity, but ignore the added value through the increased budget quality. *"So far no active role of finance in steering budget adjustments and ensuring bottom line delivery."*

HEALTHCO – A PHARMACEUTICAL COMPANY (FOCUS GROUP)

HealthCo is an internationally leading, listed healthcare company. Within the major business unit[3], a productivity programme was launched, for which every function was to elaborate efficiency gains. In this context, global sourcing initiated a new corporate sourcing improvement project, which was built around four pillars and its progress reported to the CFO:

- ◈ Structure Achieve standard sourcing organisations and setting in the regions
- ◈ Governance Establish close relationships with finance and the business
- ◈ People Get the right people with the right skills
- ◈ Efficiency Eliminate non-value adding sourcing activities

The programme was implemented on the global as well as regional and local market levels. It was primarily the reason for sourcing having reached the status of an equal corporate business partner, since sourcing appeared proactive, present, and ambitious. *"Each sourcing employee needs to scrutinise his or her individual values and beliefs, if they are consistent with the company's expectations. However, ambition is clearly needed to develop in line, since otherwise – especially in economic crises – the function could be outsourced since it does not add strategic value."* Because of this corporate pressure for efficiency gains, every function claimed ownership of as many savings as possible, leading to double counting (◈ Unclear savings ownership). However, HealthCo still faced challenges concerning its savings reporting, since management did not have full transparency of what was included in the reported savings and how they were achieved.

Corporate Savings Measurement and Reporting Approach:

◈ Purchasing exclusive measurement approach: *"Purchasing defines targets, monitors the methodology, and measures and interprets the measurement results all by itself. That in itself creates lack of credibility."* Purchasing's savings were hence not fully accepted, due to this functional-isolated and therefore presumably biased measurement approach.

◈ Ambiguous savings dimensions: In order to diminish the bias caused by the diverging interests between purchasing, the internal customer, and finance, HealthCo implemented four different performance measurement dimensions: effectiveness (incl. savings), efficiency, innovation, and risk. However, *"nobody knows how to measure them correctly, since there is too much room for subjectivity"*.

◈ Lack of business-year savings relation: HealthCo has not found a consistent time reference yet, which means that they mix the accounting of savings by purchase order, invoice, or goods

[3] HealthCo's workshop participants only represented one business unit, which, however, comprises 80% of the total business.

received. As a consequence, reported savings could not be attributed to the annual P&L statement.

◈ No reporting of price increases: Despite the fact that price increases were intended to be reported as 'negative savings', they were only achievable for direct material, leading as with the other companies, to a sugar-coated picture of purchasing's value contribution.

◈ Lack of process cost perspective: The measurement of process cost reductions was not established. Purchasing even gave the impression that it was not keen on measuring its process value contribution: *"Our CFO wants the financial figure of cost reductions, but it is just not possible – too complex and ridiculous – to translate non-financial process savings into financial savings figures."* There was purchasing intrinsic and with it corporate resistance to accept efficiency gains as part of the savings.

◈ Biased baselines: Through external quotations as the measurement baseline, different degrees of maturity between the single markets became apparent. *"People were sending out Requests for Quotation [RfQ]. They had built a system, which automatically received the quotations, automatically measured the average, and automatically reported the savings for doing nothing. So people did not negotiate anything. These people were getting bonuses […]. In addition, people asked for higher quotations to increase the average price."* This circumstance contributed to the lack of confidence in the reported savings.

◈ Ambiguous savings reporting system: There were different modes to report in the savings reporting tool: On a purchase order (PO) basis, it was possible to assign the savings to a single order, but the significant part was the non-PO spend. Savings could not be tracked based on the contracts and purchase orders, and hence became intangible.

◈ Different, cross-functional planning granularities: *"Purchasing, finance, and the internal customer do not talk the same language yet."* This was one of the reasons why savings could not be allocated to the different cost centres for reporting purposes. *"So far, different people, different systems."* The purchasing reporting tool was built on the spend structure with its commodity codes, but finance used different codes. In addition, the level of detail needed by purchasing with its category perspective in order to integrate actively in the budgeting process was not given since budgets were often too high-level.

◈ Unofficial savings reinvestment: Purchasing so far was systematically integrated neither in the budgeting phase nor in the reinvestment of savings discussions. *"If people are getting that [budget] approved, and they underrun certain things that were approved, they will start to add bells and whistles so that the maximum budget gets spent."* Apparently, purchasing was not able to track the processing of their savings during the year and hence to report them as bottom line effective at the end of the year.

◈ Operating view on purchasing – corporate perception: Due to the different languages and the fact that purchasing accomplished its savings following its own rules, it was perceived as a different team. Purchasing was perceived as non-integrated and reactive: cope with the top-down baseline decision and respond to budget cuts.

Supply Planning Process:

◈ Parallel and separate planning processes: *"Finance does theirs, business centres, we do ours separately."* For purchasing it was not necessary to know the business plans and needs for the following business year to make their sourcing strategies, since spend patterns remained similar over the years. Purchasing planned its strategies relying on assumptions of continuity, rather than longing for the planned business scenario.

◈ Unpredictability of demand volume: Since 60% of the spend consisted of indirect spend, such as marketing, and research and development that were characterised through ad hoc projects and flexibility, the demand and spend could not be forecasted precisely.

◈ Ambiguous savings tracking: Within HealthCo, the savings-related processes went from corporate headquarters to the local country organisations and back. Solid and transparent tracking was a major issue to be accomplished to guarantee the validity of the savings throughout the entire process and business year. *"One thing is to plan savings and the other one is to ensure that you measure and track them, so you prove that you deliver."*

◈ Unsystematic and one-sided collaboration: HealthCo still struggled with the issue of systematic and equal cross-functional integration. *"Sourcing even though you are involved, that is the first step, but you are still like an external person."*

Interplay between Budgeting and Supply Planning:

◈ Top-down savings targets: After having concretised the corporate strategic plan, the annual plan is fixed with its projects and budget. Top-down savings targets were given, which were not substantiated through concrete savings initiatives. This was not even expected by corporate since *"this ceiling is set and you cannot move an inch away from that."* Therefore, purchasing's motivation for savings was to meet corporate targets, with the potential consequence of missing some opportunities.

SmoCo – Fast Moving Consumable Goods Company (Observational case study)

SmoCo is an internationally leading, listed corporation, whose core business is the processing of tobacco. Procurement for direct material presented itself as a well integrated and established business partner, also regarding technical concerns, within the corporate supply chain. SmoCo has established an integrated supply chain concept, in which procurement is seen as value-adding and a required business partner. In order to identify cost optimisation potential

systematically and to track savings consistently, a corporate savings discovery programme was initiated. For this programme, a team of engineers, purchasers, and product responsibles was formed, who work full-time on identifying improvement potentials and making sure that they are implemented globally. *"We've got a huge drive in the company to take out costs!"* This close cooperation between the different supply chain players has been working in this constellation for around six years, however only for direct materials. The procurement department for indirect materials was set up only around five years ago, and currently still facing challenges regarding full corporate budgeting integration and transparency (◈ Lack of corporate budgeting integration).

Corporate Savings Measurement and Reporting Approach:

◈ Inconsistent and unaligned savings measurement systems: SmoCo was already well advanced concerning the definition and documentation of the different types of savings. For their measurement, however, they had installed different tools that were not yet aligned. Hence, the purchaser of indirects did not know about the features of the reporting tool: *"I am not sure if in the supply chain tracking tool they track budget savings."*

◈ Lack of recognition of budget included savings: As the answer to the question, if procurement is rewarded for the accomplishment of their planned savings, the operations financer said: *"It's their job, why should they be rewarded for that?"* Finance was only interested in year-on-year P&L savings and did not require budget savings to be reported.

◈ Great amount of internal customers: The tracking of planned and on-top savings could not be established at SmoCo since the budgets for indirects were spread across too many budget owners. Tracking the savings impact on the single budgets would have required too much effort: *"Because of this complexity […] people are spending more and then it's becoming a shopping thing."*

Supply Planning Process:

◈ Unpredictability of demand volume: This problem occurred mainly for indirects, since demand could not be derived from the sales plan and was hence less predictable. As a consequence, and considering the spread over many cost centres, supply planning faced major challenges, not just regarding the collection of the total demand but also the establishment of solid supply strategies and accurate prices for the budget.

◈ Lack of purchasing expertise: *"We don't support the budgeting process at this moment, because we don't have enough understanding of the category expertise to do so."* Purchasing was, hence, not able to establish a link between customers' needs and demands, and the purchase base.

◈ Different levels of expertise and standards: Within a big corporation, active in different countries and granting corporate freedom on market level, budgeting standards and team expertise varied according to the country culture and maturity. As a result, *"every market does its own budgeting practice, which causes a lot of non-comparability and no clear formulation of corporate practices"*. They planned differently, measured differently, reported differently, and people had different levels of category expertise and skill set. *"So you never know if you are covering 100% at this stage or not."*

◈ Purchasing with reactive and operating role perception: Because of the different maturity levels, the end-market purchaser on country level understood himself to be only a generalist, who performed all the different operating purchasing tasks.

◈ Lack of time for strategic activities: Since purchasers often perceived themselves as operating sourcing experts with no clear competence in strategic issues, they did not have time for additional strategy planning and operationalisation. Therefore, especially in the indirect area, category strategies were not advanced.

Interplay between Budgeting and Supply Planning:

◈ Top-down savings targets: For indirects, the company strategy was to define top-down savings targets, which had to be realised by purchasing, but were neither planned nor substantiated. *"What do we want to achieve? 10% cost reduction – top-down and then you build that up. There is no full rationale behind that, when you do it that way. […] Your P&L integrates already the target for sure, but you don't have the reality of what is in it"*.

◈ Different, cross-functional planning granularities: *"Where we are struggling at the moment, is to create this bridge between the way they look at it from an accounting perspective and the way we need to look at it from a procurement perspective."* During the budgeting process, finance and internal customers agreed on a budget for office equipment. Purchasing, however, did not know which categories were affected by that.

◈ Unofficial savings reinvestment: Budget owners followed the principle: if you want to get the same budget next year, you need to spend everything this year. This attitude led to unofficial savings reinvestments.

◈ Corporate resistance to purchasing's integration: Internal customers did not understand the advantages of a joint planning process, finance did not know about the missing bridges, and purchasing did not recognise the value of the information they could gain from joining planning discussions – a cross-functional maturity gap emerged.

BEVCO – A FAST MOVING CONSUMABLE GOODS COMPANY (OBSERVATIONAL CASE STUDY)

BevCo is an international leader within its beverage sector. Also BevCo has nearly 100% recurring spend in direct material. However, post acquisition integration activities had recently reached BevCo's supply chain department. After personnel changes and the appointment of a new head of supply chain and head of purchasing (HoP), corporate supply chain integration was declared a top group priority. It is procurement's task to function as technical expert and make sound estimations and calculations – jointly with finance and manufacturing – about the expected cost developments for the planning period. It is still in its initial phase to establish well-structured and systematic processes to become best in class – the announced goal. Like the others case companies, BevCo had a major challenge to show procurement's bottom line impact in the indirect area: *"And then it is discussion with finance and the budget holder, if they actually saved money and if they take some money out of their budgets"* (◈ Lack of corporate budgeting integration). Whereas for directs, purchasing reported the variance to standard as savings which directly hit the bottom line in the manufacturing area. In contrast to most of the other case companies, BevCo was not driven by a corporate efficiency programme, but was active in a deflationary market environment, which made them continuously aware of the cost rather than revenue growth. Therefore, the motivation for cost reductions was also given within this corporate setting.

Corporate Savings Measurement and Reporting Approach:

◈ Lack of savings guidelines: So far, BevCo has not yet developed any savings guidelines for definitions of procurement's potential types of savings and their individual ways of measurement. *"So what our responsibility is to not report anything without understanding, what we're actually talking about. Because otherwise we will get into […] a mess concerning the identification and definition of savings, if this is a saving or not."*

◈ Focus on price reductions: The question if procurement aims at achieving price as well as process cost reductions, was answered by the head of procurement with the following: *"We should be doing both, but we are still doing primarily the first one."*

◈ Lack of recognition of budget included savings: *"Nobody is saying thank you for saving those because they are already in the budget."* Only on-top savings were seen as value contribution. Therefore, purchasing ended up deliberating about whether the entire savings potential should be communicated up-front. *"If I play that game, I put my budget through at existing costs, and all of a sudden I have this new price by April and I will be the hero!"*

◈ Misguiding reporting: All realised procurement savings accounted only for the fiscal year. *"I can spend most of the year, have huge amount of efforts, have lots of resources to deliver a project that brings a lot of savings in January, but I only get three months savings for that*

year.“ This made political games likely: procurement coordinated the project that savings would be due after April to ensure that the maximum amount of savings was approved.

◈ Ambiguous savings tracking: *“I consider savings as those that are driven by efficiency from people here and not because markets are down and the external environment.”* This differentiation between market driven savings and savings based on functional achievement could not be made, due to transparency and tracking reasons.

Supply Planning Process:

◈ Incomplete category overview: As a result of the restructuring process, procurement applied different planning granularities: BevCo planned category-wise, the South-Asian procurement department brand-wise. Therefore, no global transparency for one category could be achieved. Another language problem occurred between marketing and procurement: procurement was concerned about manufacturing units and marketing about the unit for the particular end-customer.

◈ Great amount of internal customers: To collect the corporate demand for one indirect category, e.g. recruitment, was a big challenge, since the budgets were decentrally distributed. *“That is my [HoP] challenge to find the right person, who owns that budget and get in their agreement to say: I don’t want 27 recruitment agencies, I want three.”*

◈ No category strategy relevance for indirects: The main management focus remained with BevCo’s direct categories, since they accounted for around 70% of the total spend. Thus, there was *“not much finance interest in the other areas [… even though] there are lots of opportunities how we can manage that better from a purchasing point of view.”*

◈ Insufficient purchasing resources: The purchasing team was rather small. Thus, neither global categories have been formed fully yet, nor purchasers assigned as responsible to the different indirect categories. Since indirects, due to the lack of corporately recognised importance, were managed as a whole, solid supply planning was not yet achievable.

◈ Different levels of expertise and standards: There were differences in the individual abilities to act strategically. But also, *“it is quite different, managing a procurement activity in a marketing area and the skill sets and the approach to buying products.”* The consideration of these different levels played a major role for the successful and sustainable implementation of modified purchasing practices.

Interplay between Budgeting and Supply Planning:

◈ Top-down savings targets: At BevCo, bottom-up budgets often did not meet top-down budgets, because corporate issues like shareholder returns had to be met. Thus, the top-down budget dictation had priority, regardless of the soundness of prior category planning.

◈ Unofficial savings reinvestment: Especially in the case of indirect spend, internal customers take the savings and spend it on something else. *"They hit their budget; they do what they were told. Purchasing has done their job. And that's why you got a zero on the bottom line."* This was the consequence of fixed budgets for indirects. Whatever procurement saved was accounted as cost avoidance but not as budget saving.

◈ Mismatched incentive system: Despite purchasing's cooperation with manufacturing, they were measured at e.g. packaging and conversion costs respectively – two different but closely interrelated objectives. As a consequence, purchasing initiatives, which required manufacturing's support, were not actually supported by manufacturing.

◈ Unclear savings ownership: At the end of the year arguments arose about which function was allowed to report it as a saving – marketing, whose budget was cut, or purchasing, which was responsible for the savings delivery.

◈ Corporate resistance to purchasing's integration: The head of purchasing quoted the internal customers' point of view with the following: *"We can work with purchasing to make this 10% saving and then finance is going to cut my budget by these 10%, I am not really keen on working with purchasing because I am getting my budget cut forever."* This, in combination with the above two issues, and different planning granularities were the major reasons, for the retention of functional silos.

4.1.3 Consolidation and Classification of the Different Relevant Contextual Issues

In total, 43 different contextual issues were identified in the context of the five investigated corporate settings. Those issues show the current challenges and deficiencies, which are faced by practice regarding solid savings measurement. It is the aim of this thesis, to elaborate on the six defined design propositions and concretise them by focusing on these contextual issues to create a feasible and relevant measurement process. To provide a structured cross-company overview and create the basis for advancing the measurement concept in a problem-focused manner, with the aim of overcoming these challenges, the contextual issues were consolidated for further processing, as shown in Table 7.

The majority of the contextual issues was mentioned by more than one company, which qualifies them to be considered in the further process design. 'Unofficial savings reinvestment' was even considered as a major challenge for P&L savings measurement by all five companies. The group 'biased budgeting concept' represents, with a density of 73% of contextual issues, the most challenging part of the savings measurement concept, especially since it is primarily of a corporate nature, as will be explained below. 'Corporate resistance and lack of support to purchasing's integration', 'different, cross-functional planning granularities', and 'operating view on purchasing – corporate perception', each with 60% contex-

tual issue density, also drive measurement challenges for most of the companies. This shows that alignment, innovation and change still cause issues: to get purchasing into new, unknown fields, which are dominated by other corporate functions.

However, purchasing specific issues also demand special consideration for further process design, since 'ambiguous savings tracking', 'different corporate levels of purchasing's maturity and skill set', and 'indirects' planning complexity' also reached more than 50% density. Thus, it has to be the concept's main strengths – besides solid measurement – to provide guidance to enforce supply management's change and integration. Only ten out of the 43 contextual issues were mentioned by just one company. However, it has to be kept in mind that the contextual issues for PhoneCo, as the longitudinal and participatory case study, are based on personal experience and observation, whereas for the other companies, contextual issues were explained by the corporate counterparts from their own perception. Thus, blank fields do not necessarily indicate that these issues were not relevant, but that they were not explicitly mentioned. As no clear distribution of importance can hence be assigned, all contextual issues will be considered in the analysis.

Through the different colour shades used in Table 7, it becomes obvious that change is going on and companies are moving forward concerning the field of savings measurement. For only 18% of all indicated contextual issues across all companies, the old approach (dark grey) will be kept and no change is intended. This is especially the case for PhoneCo as a company, which is still based on traditions. The majority has realised the need for improvement and has planned a new approach (light grey), which is, however, not or not fully realised yet. Nevertheless, it also becomes apparent that only in 15% of the total contextual issues, is the new approach fully implemented and established (medium grey), which shows that so far, no best practice company exists which has overcome the full range of its measurement issues.

In addition, each contextual issue was allocated to one of the six design propositions, which form the basic framework of the savings measurement approach, e.g. 'ambiguous savings dimensions' is an issue of 'Measurement and Reporting' as Design Proposition 5. Originally, it was assumed that all design propositions were process-related, which means that all occurring issues in their context could be solved through a certain process design. However, case research made clear that this mechanistic view on a savings measurement process was not applicable, as the following statements show: *"There is always a kind of human element in your assumption. You can't say, I have 100 and move to 200 […] and therefore I should have 25% rebate"* (SmoCo). *"It is not just about the pure numbers, but basically about the interaction between departments and about politics and games people play"* (BevCo). Thus, the remaining parts of Chapter 4 elaborate approaches for the indicated 'design-related' contextual issues, whereas, the contextual issues which are of a corporate nature and not entirely solvable through process design, will be discussed as implementation issues in

Grouped Contextual Issue	Contextual Issue	Evidence from the Different Companies					Affected Design Proposition	Design or Corporate Issue
		Participatory Case	Focus Group	Focus Group	Observational Case	Observational Case		
		PhoneCo	***BeautyCo***	***HealthCo***	***SmoCo***	***BevCo***		
Ambiguous savings measurement and reporting	Ambiguous savings dimensions	‣ Measurement overlaps for CR1 and CR2; FB unclear	‣ Differentiation between cost avoidance and saving as customer's perception	‣ Purchasing measurement dimensions (incl. savings) too subjective			#5 - Measurement & Reporting	Design
	Ambiguous savings reporting system	‣ Always manual entries required		‣ Non-PO spend as intrans-parent, uncontrollable mass within the reporting system			#5 - Measurement & Reporting	Design
	Biased baselines	‣ Best quotation as baseline		‣ Quotations as benchmark leading to biased measurement results			#5 - Measurement & Reporting	Design
	Inconsistent and unaligned savings measurement systems	‣ BU system customisation	‣ Purchasing's Excel not linked to Finance's SAP		‣ Different savings measurement tools for different savings and spend categories		#5 - Measurement & Reporting	Corporate
	Lack of business-year savings relation	‣ Reported savings negotiated in prior business year (frame contracts)		‣ PO, invoice, or goods received as savings time reference			#5 - Measurement & Reporting	Design
	No reporting of price increases	‣ Reporting only of price reductions, no price increases	‣ Reporting only of price reductions, no price increases	‣ Reporting only of price reductions, no price increases			#5 - Measurement & Reporting	Design
	Purchasing's exclusive measurement approach			‣ Planning, realisation monitoring, and reporting done by sourcing exclusively			#5 - Measurement & Reporting	Design
	Unclear savings ownership			‣ Due to corporate efficiency programme, every function tries to claim savings		‣ Purchasing delivers saving, which affects customer's budget, who managed to spend less	#5 - Measurement & Reporting	Design

Grouped Contextual Issue	Contextual Issue	Evidence from the Different Companies					Affected Design Proposition	Design or Corporate Issue
		Participatory Case	Focus Group	Focus Group	Observational Case	Observational Case		
		PhoneCo	***BeautyCo***	***HealthCo***	***SmoCo***	***BevCo***		
Ambiguous savings tracking	Ambiguous savings tracking	‣ Value contribution measurement tool only adds saving per release order ‣ No tracking by purchasing of the financial effects achieved through their initiatives		‣ Inconsistencies due to the complex corporate structures and processes		‣ No clear differentiation between savings based on functional achievement or positive market development	#4 - Realisation & Monitoring	Design
Biased budgeting conception	No price-quantity budgets	‣ Budget as amount of money rather than specific needs based on price*volume	‣ E.g. marketing budget based on a fixed percentage of sales				#2 - Supply Planning	Design
	Top-down savings targets	‣ Top-down budget cuts without prior definition of savings initiatives		‣ Top-down savings targets without prior definition of savings initiatives	‣ Top-down savings targets without prior definition of savings initiatives	‣ After bottom-up planning, always additional on-top savings targets	#2 - Supply Planning	Design
	Unofficial savings reinvestment	‣ Unofficial budget shifts during the year - without purchasing's involvement - defeat the bottom line impact of purchasing's on top savings	‣ If finance did not take action, savings were reinvested	‣ Lack of official reinvestment discussions ‣ Governance issue as one of the 4 pillars of the purchasing improvement programme	‣ Following the principle: If you want to get the same next year, you have to spend everything this year	‣ Internal customer take the savings and spend it on something else	#4 - Realisation & Monitoring	Design
Corporate resistance and lack of support of purchasing's integration	Corporate resistance to purchasing's integration	‣ Internal customers fear budget cuts as consequence of purchasing's integration ‣ Budget consistency over the years as indicator for mgt. accounting's accurate job	‣ Internal customers fear budget cuts as consequence of purchasing's integration		‣ Lack of understanding from internal customers of the value added of the integration ‣ No realisation of the missing language bridge	‣ Internal customers fear budget cuts as consequence of purchasing's integration	#3 - Corporate Planning Integration	Design/ Corporate

Grouped Contextual Issue	Contextual Issue	Evidence from the Different Companies					Affected Design Proposition	Design or Corporate Issue
		Participatory Case	Focus Group	Focus Group	Observational Case	Observational Case		
		PhoneCo	***BeautyCo***	***HealthCo***	***SmoCo***	***BevCo***		
Corporate resistance and lack of support of purchasing's integration	Lack of corporate budgeting integration	‣ Purchasing only marginally involved in budget planning	‣ Purchasing not involved in budget planning		‣ No budget involvement for indirect material	‣ No budget involvement for indirect material	#3 - Corporate Planning Integration	Design/ Corporate
	Lack of cost awareness	‣ No interest on purchasing side in the effects of their reported best prices on budgets	‣ Focus on revenues, rather than costs				#6 - Corporate Commitment	Corporate
	Lack of top-level support	‣ In savings guidelines no concrete pressure, concerning 'how to integrate purchasing', only that it should be integrated	‣ No active role from finance to realise integrated measuring				#3 - Corporate Planning Integration	Corporate
Different corporate levels of purchasing's maturity and skill set	Different levels of expertise and standards	‣ Different mindsets and hence levels of maturities and expertise across the various explored categories	‣ Strategy on procurement management level versus operations at procurement basis	‣ People and structure issue as two of the 4 pillars of the purchasing improvement programme	‣ Varying team expertise and budgeting standards on market level	‣ Different levels of personal skill set in strategic issues, and the category management of directs vs. indirects	#6 - Corporate Commitment	Corporate
	Incomplete category overview	‣ Inconsistent wording for the same material numbers across different BUs, no complete list of material numbers, etc.				‣ Different purchasing-internal classifications (brand vs. category view)	#1 - Measurement Prerequisites	Design

Grouped Contextual Issue	Contextual Issue	Evidence from the Different Companies					Affected Design Proposition	Design or Corporate Issue
		Participatory Case	Focus Group	Focus Group	Observational Case	Observational Case		
		PhoneCo	***BeautyCo***	***HealthCo***	***SmoCo***	***BevCo***		
Different corporate levels of purchasing's maturity and skill set	Lack of purchasing expertise	‣ Technical specifications and category cost drivers unknown			‣ Lack of sound category knowledge to satisfy customers' demands and linking them to the purchase base		#2 - Supply Planning	Design
	Purchasing with reactive and operating role perception	‣ "The internal customer is the process owner of all strategic activities" ‣ Passiveness and lack of motivation for strategic tasks			‣ On market level, purchaser as generalist in operating tasks		#6 - Corporate Commitment	Corporate
Different, cross-functional planning granularities	Different, cross-functional planning granularities	‣ Project (vertical) vs. category/material number level (horizontal) view ‣ Tracking of total budget on mgt. accounting side; detailed sub-category tracking on purchasing side		‣ Too high-level budgets for purchasing ‣ "Purchasing, finance, and the internal customer do not talk the same language yet"	‣ Too high-level budgets for purchasing		#1 - Measurement Prerequisites	Design
Incomplete scope of defined and applied savings measures	Focus on price reductions	‣ Almost no reporting of financial benefits	‣ Specification changes only 10% of total savings			‣ "We are still focusing on price savings"	#5 - Measurement & Reporting	Design/ Corporate
	Lack of process cost perspective			‣ Qualitative efficiency gains not accepted by CFO and purchasing			#5 - Measurement & Reporting	Design/ Corporate
	Missing definitions for certain cost savings types	‣ No measure for cost avoidance, etc.					#5 - Measurement & Reporting	Design

Grouped Contextual Issue	Contextual Issue	Evidence from the Different Companies					Affected Design Proposition	Design or Corporate Issue
		Participatory Case	Focus Group	Focus Group	Observational Case	Observational Case		
		PhoneCo	***BeautyCo***	***HealthCo***	***SmoCo***	***BevCo***		
Inconsistent top-down strategy implementation	Inconsistent top-down strategy implementation	‣ No link between global and BU purchasing strategy ‣ Top-down presented P&L impact measurement logic not translated into operating activities	‣ Procurement management, but not operating procurement with ambition to change				#2 - Supply Planning	Design
Indirects' planning complexity	Great amount of internal customers	‣ Indirect services unable to collect corporate demand	‣ Local (intransparent and inaccessible) budgeting		‣ Savings tracking for indirects across all budget owners too much effort	‣ Decentralised distribution of budget for indirect material, not one budget owner	#1 - Measurement Prerequisites	Design
	No category strategy relevance for indirects	‣ Indirects too insignificant to create budget transparency				‣ Corporate focus upon directs, no care about indirects	#2 - Supply Planning	Design
	Unpredictability of demand volume	‣ Uncertain volume for indirect services		‣ Uncertain volume for indirect services	‣ Uncertain volume and specifications for indirects, especially marketing		#2 - Supply Planning	Design
Insufficient purchasing resources	Insufficient purchasing resources					‣ Purchasing team too small to cover all strategic issues in detail for directs and especially indirects	#1 - Measurement Prerequisites	Corporate
Lack of consistently operationalised category strategies	Lack of consistently operationalised category strategies	‣ Informal and unsystematic face-to-face discussions of purchasing initiatives and their savings potential	‣ Initiatives performed, however, not previously derived from strategy				#2 - Supply Planning	Design

Grouped Contextual Issue	Contextual Issue	Evidence from the Different Companies					Affected Design Proposition	Design or Corporate Issue
		Participatory Case	Focus Group	Focus Group	Observational Case	Observational Case		
		PhoneCo	***BeautyCo***	***HealthCo***	***SmoCo***	***BevCo***		
Lack of data transparency	Lack of data transparency	‣ Inability to obtain budgeted prices on material number level					#1 - Measurement Prerequisites	Corporate
Lack of official documentation	Lack of official documentation		‣ Budgeting process not officially documented			‣ No corporate savings guidelines applied	#1 - Measurement Prerequisites	Design
Lack of purchasing-customer cooperation	Different cost calculation standards		‣ Manufacturing plan based on real-time prices, sales plans on standard price				#2 - Supply Planning	Corporate
	Missing link between customers' needs & purchasing expertise	‣ Purchasing uninformed about all the relevant customers and their needs					#2 - Supply Planning	Design
	Parallel and separate planning processes		‣ Supply chain planning independent from sales planning	‣ Purchasing, finance, and internal customer with individual plans			#2 - Supply Planning	Design/ Corporate
	Unsystematic and one-sided collaboration	‣ Purchasing's cooperation with its customers on demand and irregular basis		‣ Despite purchasing's involvement, still an external person			#3 - Corporate Planning Integration	Design/ Corporate
Lack of time for strategic activities	Lack of time for strategic activities			‣ Efficiency issue as one of the 4 pillars of the purchasing improvement programme	‣ Purchasing more concerned with operating than strategic activities		#2 - Supply Planning	Corporate

Grouped Contextual Issue	Contextual Issue	Evidence from the Different Companies					Affected Design Proposition	Design or Corporate Issue
		Participatory Case	Focus Group	Focus Group	Observational Case	Observational Case		
		PhoneCo	*BeautyCo*	*HealthCo*	*SmoCo*	*BevCo*		
Operating view on purchasing – corporate perception	Operating view on purchasing – corporate perception	‣ Focus on operating, rather than strategic profile in global purchasing strategy	‣ Procurement expected to deliver prices, not to be strategically active	‣ Procurement delivers price information and finance decided about the standard cost			#3 - Corporate Planning Integration	Design/ Corporate
Sub-optimal coordination of reporting and incentive structures	Lack of recognition of budget included savings	‣ Only on-top of budget savings considered as purchasing's contribution			‣ Only interested in year-on-year savings, regardless of budget	‣ Budget included savings not recognised as rewardable savings, only on-top savings	#5 - Measurement & Reporting	Design/ Corporate
	Misguiding reporting					‣ Savings reporting only with regard to the fiscal year, no carry-over effect	#5 - Measurement & Reporting	Design
	Mismatched incentive system	‣ No performance-linked salary; only on-top savings incentives				‣ Purchasing team longing for on-top savings, delaying planned savings ‣ Manufacturing different incentives from purchasing - biased cooperation	#6 - Corporate Commitment	Corporate
Unpredictable category features	No planning certainty in innovation-driven categories	‣ Supply planning not achievable due to ad hoc projects					#2 - Supply Planning	Design
	Unpredictable price developments		‣ Volatile procurement markets leading to unpredictable prices				#2 - Supply Planning	Design

Table 7: Overview and classification of the different contextual issues.

Chapter 5. Some contextual issues could not be clearly allocated to be of a design or corporate nature, since they are approachable through process design, but eventually they depend on corporate support. This differentiation is indicated in the last column of Table 7. *"These things, they aren't complex, but they are confusing. The numbers and the processes are simple, but it is confusing"*, as BevCo's operations financer concluded.

4.2 Integrated Planning and Budgeting as a First Step Towards Solid Budget Effects Measurement

It is the aim within this chapter to recall the design propositions, which are concerned with measurement prerequisites (#1) in 4.2.1, supply planning (#2) in 4.2.2, and corporate planning integration (#3) with the focus on budgeting integration in 4.2.3, and to formulate clear design rules for the supply manager at the end of each sub-chapter about how to intervene and to approach the specific contextual issues.

In each sub-chapter, first, the validity of the general design proposition is compared to the contextual analysis. It is determined if the proposed context really occurs in practice. The contextual issues, which have been assigned to the corresponding design proposition, represent the reasons or composing factor of the individual sub-optimal context. Thus, to concretise the design propositions in a substantiated manner, different recommendations of intervention are elaborated for the contextual issues. The suggested interventions are based on the cross-case analysis of the performed or planned interventions of the five companies, to the extent to which insight was provided. As final outcome, the budget effects measurement approach is refined through solid interventions eventually leading to the formulation of concrete design rules. Thus, the solutions, approaches, and processes designed within 4.2 and 4.3 can be regarded as best practices. Since each of the case companies was on a different level of maturity at the time of the research collaboration, the designed solutions for the different issues below are not always based upon the approach of each of the companies, but only on best practices as classified by the author.

4.2.1 Definition of Measurement Prerequisites – Design Rule 1

Design Proposition 1 – Measurement Prerequisites:

> If inconsistent savings measurement practices and interpretations are noticeable, define and communicate measurement prerequisites in the form of standardised processes and baselines to create measurement certainty and to obtain comparable measurement results through increased compliance.

In the course of the case research, the problem of ambiguous savings measurement and reporting was discovered in the context of all five companies. Especially in the focus group discussions and at PhoneCo this was a major issue, as can be seen in Table 7. One contextual

issue, which among others is responsible for this circumstance of ambiguity and uncertainty, and for which an adequate intervention has to be defined, is:

◈ **Lack of official documentation:** The first step towards solving ambiguity is the clear definition of measurement steps and constituents. The content of these issues will be the subject matter of the following chapters. The outline and documentation, however, have to be in place before the measurement process is initiated in the form of a comprehensive **savings measurement handbook**, whose structure is the subject of the following:

- **Purpose & Objectives:** It should be the overall objective of a measurement handbook, to provide a guideline for supply management to facilitate its integration into the budgeting process and to obtain approval for its planned savings. Especially in the case of the initial introduction of savings guidelines, the purpose and objectives should be explained in detail to convince the staff to collaborate and comply with the new standards. The importance of savings measurement, its impact on the individual supply manager, and the purpose, addressees and usage of this handbook must be outlined. As BeautyCo told its handbook users: *"To describe the basic principles for measuring procurement successes to provide a globally consistent basis for a fair and accurate calculation of the value contribution of procurement and to describe the process, responsibilities and tools for continuously documenting initiatives, monitoring and reporting potentials and procurement successes."*
- **Savings Perception:** In this section, the general understanding of savings and their requirements need to be discussed. SmoCo defined in this section its so-called 'productivity savings': *"A productivity initiative is an activity whose purpose is a sustainable cost reduction/cash increase compared against previous year and is not a result of the business cycle."* All possible types of cost reductions and their degree of approval have to be defined in this section: price reduction, process cost reduction, cost avoidance, P&L savings, cash savings, etc.
- **Scope:** SmoCo defines three categories, into which productivity initiatives can be split: supply chain or directs, indirects, and overheads. HealthCo lists precisely all direct and indirect categories, for which savings can be reported.
- **Roles & Responsibilities:** Following the savings perception, the levers to achieve these savings have to be explained as part of supply management's expected role model. Purchasers' expected role – either commodity buyer or a cost challenger – ought to be clarified. HealthCo distinguishes between 'price lever' (savings through price reductions), 'demand lever' (joint savings through volume reductions), and 'process lever' (savings through improved process design or product specification), since *"supply managers' scope of accountability concerning realised budget effects has to be clearly defined"*. Through this definition, purchasing becomes aware of what is expected – not only supplier negotiations

to achieve the best price, but also involvement in technical issues and process design. Otherwise, purchasing will not be able to achieve its full savings potential and elicit adequate corporate recognition. In addition, the savings responsibilities have to be defined: *"Procurement is responsible for identifying the savings and finance has the stick to implement them; purchasing is monitoring, not enforcing"*, HealthCo's definition. With this up-front clarification, discussions about savings ownership and compliance can be mitigated. Furthermore, responsibility for savings and with that the monitoring instance has to be defined: *"[Global procurement] is responsible for consolidating initiatives and potentials across all affiliates and categories, investigating accuracy and completeness of the provided information, and communicating and tracking necessary adjustments"*. With that statement, BeautyCo announced global procurement to be the overall measurement process owner and direct contact for top management.

- **Integrated Process Outline:** In this section, the purchasing process has to be outlined, particularly concerning its integration into the corporate budgeting process. Who needs to do and report what until when? A timeline with deadlines and milestones should be designed, indicating the roles and responsibilities of the individual supply manager. As long as detailed category planning is not perceived as an ongoing process, the timeline of the category planning process also has to be clearly plotted in order to be able to contribute on time to the budgeting process, as elaborated for PhoneCo. *"I think it is important for the people locally to know, where to channel their demand"*, as SmoCo's purchaser stated.
- **Savings Methodology:** This section should be the major part of the measurement handbook, since it provides all relevant information about how to calculate the different types of savings that were defined before. One needs to be aware of distinguishing between direct and indirect material and within those between recurring and non-recurring spend, and define and prioritise precisely which measurement baseline to apply for which type of saving. Carry-over effects in the case of multiple year contracts and savings in the case of framework agreements and capital expenditure thereby require special attention. To facilitate understanding and avoid misinterpretations, concrete measurement examples, as provided by BeautyCo and HealthCo, are advisable.
- **Tracking Tool:** Since planned budget effects have to be captured and their realisation tracked consistently to guarantee reliability, a systematic documentation and tracking tool has to be implemented, whose functionality and usage also have to be defined within the handbook. If individual degrees of implementation of each planned initiative are applied, each degree has to be explained in detail – for planned as well as on-top initiatives. Following BeautyCo's approach, the prerequisites, which have to be met by the initiative to be included in the list of purchasing initiatives, should also be clarified, *"1. Major role of procurement, 2. Value creation and 3. Procurement excellence"*.

- **Savings Reporting:** Clear instructions regarding the entries in the savings reporting tool have to be given for unbiased results. As in the case of BeautyCo, the tracking and reporting tool is designed as a working kit, to be constantly used. The individual user is free to decide how often he enters process data. As a consequence, it is necessary to define certain reporting deadlines up to which all data have to be entered to retrieve the input for the regular savings reports, and the type of data that are required. Reporting intervals must be specified depending on supply management's internal coordination and external data requests by top management.
- **Questions and Answers (Q&A):** It is also considered helpful to anticipate frequent questions and to provide answers within a Q&A section, which is elaborated over time, based on the implementation experiences.
- **Contacts:** In case of open questions and uncertainties, if an initiative can be reported as savings or not, contact details of the respective responsible person should be provided.

Supply management owns these guidelines. However, they need to be elaborated with and approved by the internal customer, operations finance, and business to obtain the necessary top-down implementation support and approval of the measurement results. A corporation with different regional levels should develop **global guidelines**, which are communicated top-down for the global issues – calling for compliance at the regional and local levels – and local guidelines – covering the operating issues. Based on HealthCo's experience, the implementation of the guidelines should be accomplished through a joint face-to-face meeting with all local representatives, initiated by the head of global supply management to guarantee a common understanding and provide a professional platform in case of uncertainties. The above aspects need to be discussed and made clear before the savings measurement initiation. If purchasing associates understand from the beginning, what is behind the initiation, what is expected from them and how it is to be done, high compliance rates and operating support can be expected. Depending on the corporate level of maturity, the design of a savings measurement handbook can vary. It will certainly change over time, since it needs to be considered as a working tool that advances with the experiences that are gained in the course of the measurement process implementation and establishment.

Supply management-specific contextual issues are ◈ **Incomplete category overview** and ◈ **Great amount of internal customers**. *"The deep-understanding of your data, for me is a gate-opener. If you sit down with your budget holder and discuss: last year you spent this amount of money with those suppliers with this activity, you are credible around the table. However, if you come and ask: what is your budget? The budget owner says: what do you know?!"* Following SmoCo's statement, it is essential to develop a broad and **comprehensive category overview** as supply manager in the first place. The supply manager needs to know

the material numbers and internal customers, which belong to his scope of responsibility – even if this leads to large efforts for widespread indirect categories. The supply manager ought to know all his relevant information sources. In a structured documentation, which – in the case of PhoneCo – became part of the category strategy booklet, relevant information needs to be presented, which functions as the supply manager's daily tool: category layout on material number level, supplier landscape and contract volumes, internal customer characteristics, and order volumes, contacts, etc. It is not yet about strategic developments. It should be facts and figures like a category database, which is updated regularly, providing guidance and transparency.

◈ **Different, cross-functional planning granularities** also lead to ambiguous savings results at the end of the year. *"The trick here is* [according to SmoCo's purchaser], *what is the right level of granularity worldwide for the three partners to work well together. Finance can be fine at a P&L level, and stakeholders are sometimes on an activity – a lower – level. You need to have an alignment of granularity in the first place, to make a good discussion happen."* To match supply management's material number (Mat#) perspective with the internal customers' project or product perspective and finance's cost centre and budget perspective, a transparent **translation matrix**, as high-level, pictured in Figure 43, needs to be elaborated.

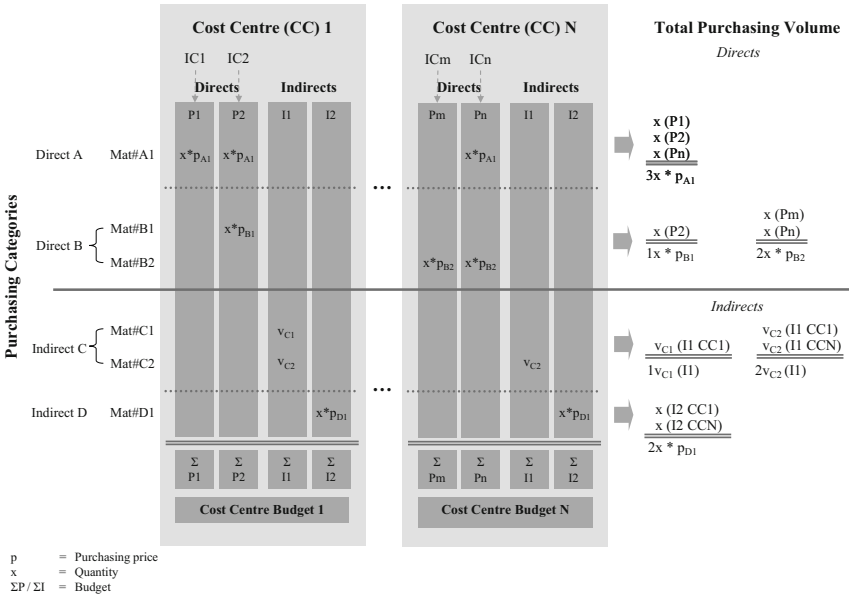


Figure 43: Translation matrix for a common language.

A company consists of several cost centres with individual budgets for direct as well as indirect material, depending on the type of cost centre. Internal customers are budget owners (e.g. ΣP1) with the technical responsibility for a product or project. The concept of a translation matrix follows the idea of a Bill of Materials (BOM), as applied within the FMCG companies: after having identified the expected demand and considering the stock keeping policy, the quantity of products, which has to be produced and for which materials have to be purchased, is defined. Each product is structured by the internal customer into its different composing elements, aligned with supply management's category and material number system. The internal customer completes the BOM for his project or product and transfers it among others to supply management. This procedure has to be accomplished at an early stage of the planning process. Only by doing it in such a detailed and cross-functional way, can supply management gain the necessary transparency over the total required volume to be purchased on a material number level and assess the best savings potential. The other side effect of this matrix-approach is the clear up-front visibility of the single budget constituents for the budget owner and finance for controlling purposes. Supply management knows the purchasing volume for direct material and can allocate the material demand to the individual internal customer and his budget. As a consequence, after having achieved savings, they can be ascribed to the single budgets – realising the budget link. This approach is also used within BevCo: *"What we do is we take their volume, specifically for each market […] and we apply the percentage increase and say: to your bottom line – year-on-year – your cost of sales is going up this [amount]."*

The challenge occurs in the case of indirect material, where no internal customer functions as contact person, but multiple cost centres, which all have a budget for indirect material, and where often no price-quantity budget can be planned, due to uncertain quantities e.g. for travel. Thus, a total volume budget is set, based on previous year figures. Even in these cases, supply management requires high transparency of the demand volume. *"You need to have an understanding of what your business is procuring in order to define this bridge [of common language]"*, as SmoCo's purchaser stated. *"We had to build this bridge. So we defined meaningful categories, e.g. for marketing, we have creative agency, market research, etc. and below that, we have multiple detailed categories that are more focused – things that are more related to control business."* Again, only if the indirect category manager becomes aware of all the cost centres and their individual demand, can he negotiate under best conditions and link the savings to the individual budgets.

The idea of this translation matrix is generally applicable; the degree of granularity, however, depends on the individual corporate setting or to say it in SmoCo's words: *"It's a tailor-made taxonomy"*. It provides supply management, in combination with the category overview and the savings guidelines, with the necessary equipment to enter the actual preparation phase for

solid savings measurement: supply planning. In order to have the authority to participate in budgeting issues and even to present budget cut potential, supply management needs to be a competent partner with high up-front visibility.

Following Denyer et al. (2008) and Romme and Endenburg (2006) and based on the empirical support and evidence, Design Proposition 1 can be further elaborated into a Design Rule for supply management to pursue in order to be able to measure its budget effects as part of its Return on Spend in a reliable and transparent way:

Design Rule 1 – Measurement Prerequisites:
In the context of inconsistent savings measurement practices and interpretations, to avoid misinterpretations, obtain comparable measurement results, and create corporate confidence in them,

I[1] Communicate unambiguously your measurement approach by developing a comprehensive and clearly formulated savings measurement handbook with roles and responsibilities, accessible to all involved measurement parties – supply management, internal customer, and finance;

I[2] Obtain a concrete idea of the single drivers of your category through the collection of all relevant category information, despite the effort required. Document it, and integrate it within existing tools to use and update the information regularly. This overview is considered the basis for your category strategy;

I[3] Aim at a common language and comparable planning granularities through the design of a translation matrix, which provides you with up-front visibility of the required demands and the budget composition, essential for the creation of the savings-budget link.

4.2.2 Outline of a Comprehensive Supply Planning Process – Design Rule 2

Design Proposition 2 – Supply Planning:

If supply management expects to be integrated into corporate planning processes as an equally considered planning partner, establish comprehensive supply planning processes and communicate supply management's knowledge proactively to be corporately accepted as competent supply expert and cost challenger based on the recognition of its value-adding contributions to the identification and discussion of cost reduction potential.

Having collaborated with various supply managers in the course of this case research, supply management's ambition to be regarded as competent business partner was noticeable within each of the companies. Thus, the overall context as described in Design Proposition 2 is valid.

However, also in this case, several contextual issues were identified in practice that challenge supply management to reach its goal.

◈ **Lack of purchasing expertise:** Before supply management can conduct comprehensive supply planning, it has to be equipped with standard cost management knowledge. It must be aware of the cost drivers of the category and the initiatives and levers, which can be used to manage these drivers to achieve cost reductions. *"The reason why we work so well with direct materials is because we know their cost drivers"*, as SmoCo's purchaser said. Therefore, a classical **cost analysis** should be conducted in the first place, which consists of the investigation of the cost situation and the influencing cost drivers to realise key cost categories and identify possibilities for cost reducing initiatives (Bea & Haas, 2001, p. 313; Burt et al., 2003, p. 413). Mehra and Inman (2004, p. 713) argue that sustainable cost reductions are only realisable with solid cost management through aligned supply practices. Thus, the category manager's primary task is to map the cost structure of his category to become aware of the relevant cost categories, such as material or personnel costs. The cost trend of the single categories has to be investigated depending on the individual cost drivers (Götze, 2004, p. 267). Cost reducing initiatives will only show effect, if they are cause-oriented. Cost drivers can be divided in three groups: operating drivers (e.g. personnel), tactical drivers (e.g. process efficiency), and strategic drivers (e.g. product complexity) (Homburg & Richter, 2002, p. 61; Kajüter & Kulmala, 2005, p. 179). BevCo just started with category cost management and now they know *"what the supplier is charging us and if we see that material prices are going down we can tell our suppliers how to adapt their prices and how much less we should be paying"*, improving the overall cost situation.

With this analysis, the category manager needs to be able to define appropriate purchasing initiatives for cost reduction purposes. Particularly in the case of recurring categories, a **standard set of initiatives** is advisable (Appendix H). BeautyCo for instance integrated its standard initiatives into their savings tracking tool. This way, the supply manager always considers the entire scope of potential cost improvement initiatives and is continuously reminded of alternatives or additional activities. This list is kept flexible, since new types of initiatives might arise and other types of initiatives prove to be irrelevant over time.

◈ **Parallel and separate planning processes:** Since separate planning processes are not only a design, but primarily a corporate issue, the feasibility of the approach to them depends on the organisational structure. In order to accomplish ideal supply planning, as will be shown in the following, supply management depends on early planning involvement and on the demand information of the internal customer. Thus, a systematic cross-functional collaboration has to be established, if possible even in form of institutionalised **cross-functional sourcing teams** (Figure 44). BeautyCo so far defines sourcing teams as a highly promoted savings initiative. For its corporate efficiency project, SmoCo even appointed full-time employees from

different functions to work together on savings potential identification. BevCo's reaction regarding sourcing teams was: *"Yes, we are getting this more this year, having operations as a business unit – so purchasing and manufacturing are part of the operations business unit. So we got within that a motivation to deliver something."*

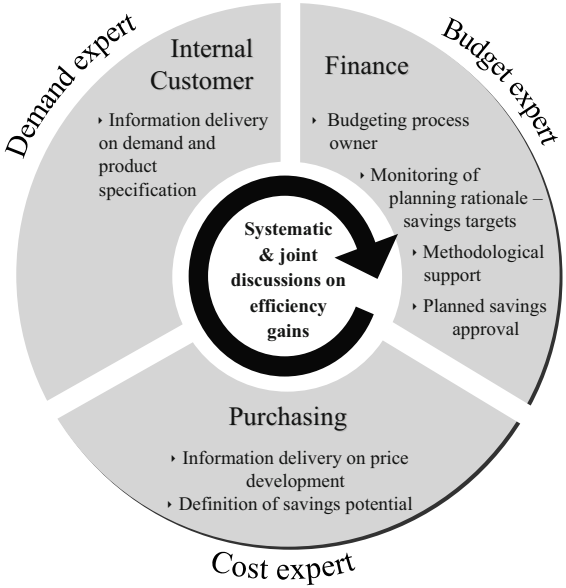


Figure 44: Composition of a cross-functional sourcing team and the individual planning tasks.

In a sourcing team constellation, the participants meet regularly within a pre-defined and systematic setting to exchange information and discuss jointly potential efficiency gains, achievable through cost reductions and process or product improvements. Thereby, supply management as coordinator must manage the cross-functional exchange and interaction, deliver pro-actively supply information, and collect demand information. Supply management takes the role of the supply expert and cost challenger, the internal customer as demand expert provides information on sales and product specifications, and finance, as the owner of the budgeting process, is responsible for the budgeting rationale.

◈ **Several contextual issues**[4] attributed to Design Proposition 2 cannot be solved individually, because they are largely interconnected. Thus, one **overarching strategic supply and category planning approach**, applicable for direct as well as indirect material and

[4] See Table 7: 'Inconsistent top-down strategy implementation', 'no category strategy relevance for indirects', 'unpredictability of demand volume', 'missing link between customers' needs and purchasing expertise', 'no planning certainty in innovation-driven categories', and 'unpredictable price developments'.

considering the relevant contextual issues, is discussed in the following: *"So it's not: Oh, we don't do anything and then it is company plan time, so let's look at savings. Company plan time is one of the stages, where we spend more time on it. But it is actually an ongoing process during the year."* This statement conveys planning at SmoCo to be like a mentality – the ideal perception.

In general, solid supply planning requires continuous supply market screening and monitoring activities as in SmoCo's case: *"You need to know: what is the true scope within your business? What is the true stakeholder mapping […]? What is the market you are interacting with as supplier base […] and understanding the market and the cost drivers behind that, the latest break-through innovation, etc. So it is fully an in-depth expertise of one category."* At PhoneCo, the same major points of interest of supply planning were identified and implemented: innovation, demand, cost, and in addition corporate strategic guidelines. BevCo shared this opinion: *"You need to spend more time on the top line. […] It is talking about strategy and what we want to achieve next year […] what will happen in the entire business."* BevCo claims a high-level translation and implementation of the top-down strategy as an initial step, before discussing price or volume details. Only such a starting point facilitates corporate strategy alignment. Based on these statements and the experiences gained at PhoneCo, Figure 45 illustrates a high-level best practice supply planning approach.

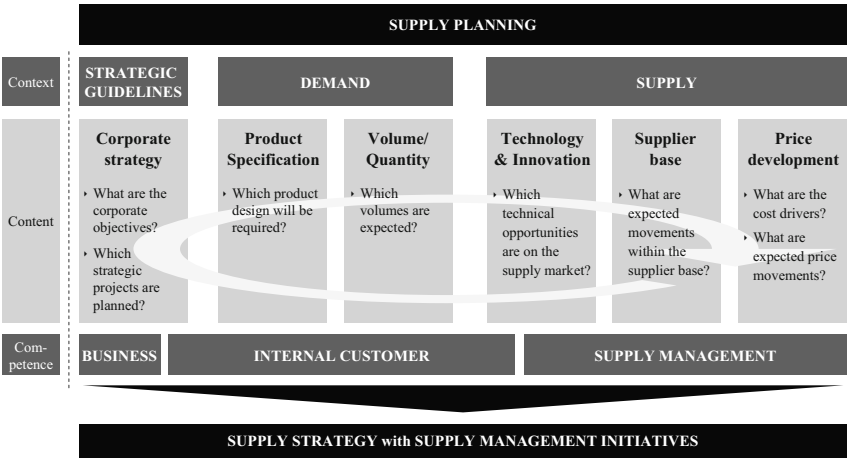


Figure 45: The pillars of a comprehensive, cross-functional supply planning process – Best Practice.

Strategic Guidelines: The input for this planning context is primarily top-down driven. In the course of the corporate strategic planning process, certain strategic projects and directions are determined, which have to be realised by different business units and corporate functions.

"We need as early as possible to know what the business strategy thinking is, such that we as a purchasing team and our strategies align with the business strategy", as BevCo stated. The internal customers are in direct contact to the business level and often have individual projects planned themselves. Thus, they also function as expert in strategic guideline matters and information provider within the sourcing team. *"When we develop our category strategies, it is more sort of a business strategy for a category of expenditure. Because if marketing is going in one direction, the supporting category strategy from a procurement perspective also has to support their goals"*, stated SmoCo's purchaser.

Demand: The demand context is internal customer driven. Due to end customer research, the internal customer is knowledgeable about product specifications, demanded quality levels, degree of product customisation, target costs, and expected sales demand. Based on this information, which is the subject of cross-functional discussions with logistics, supply management, and finance as sourcing team members, expected quantities to be purchased are estimated. This demand collection approach becomes challenging for indirect material, especially for widespread and unpredictable categories like travel. As a first step, the entire demand volume – not in the form of a price-quantity logic – can be jointly planned on historical demand, taking the potential impacts of the strategic projects into consideration (e.g. expected higher demand for transatlantic flights to the new production site). If there are too many internal customers, an approach to how to bundle their expected demand has to be defined. It is a goal to have a small number of contact persons within the sourcing team, who have transparency over the majority of the category demand – following the 80/20 approach. Based on the entire demand volume, supply management negotiates the new price and is then able to break the volume down into its price-quantity components.

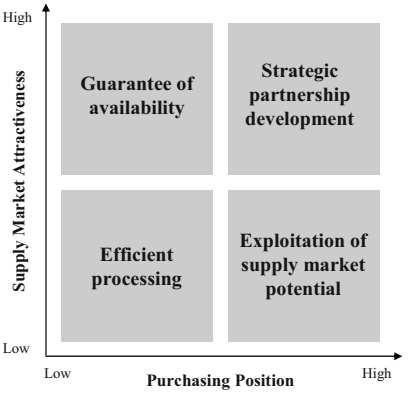
Supply: The competence for technology and innovation in the supply market is with supply management, in interaction with the internal customer. Supply management needs to screen the supply market, establish supplier partnerships to have a first mover advantage in case of market innovations. It can suggest specification changes, however is always reliant on the internal customer's feedback about the feasibility and end customers' perception, especially in the FMCG environment, in which taste and look play significant roles, according to SmoCo, BevCo and BeautyCo. Another pillar in the supply context is the analysis of the supplier base: *"How much do they spend with which suppliers? How frequent is that supply? What does the market place look like? What is the market dynamic […]? How dependent are we on suppliers? […] Where do I want to get to in terms of risks, challenges, opportunities, supplies, and market position? […] All these macro and micro factors – thinking about the commodity group as a business and where they want that to go"*, as BevCo's head of purchasing summarised it. The supply manager has to be able to provide solid answers to the above questions, which is only achievable through continuous and structured supply market

research. With additional cost driver analyses, the supply manager should be equipped with enough material to be able do sound forecasts of the category price development. *"We [BevCo] try to understand what are the commodity price movements? How closely the commodities relate to the constituent elements of what we're buying. Therefore, are we buying below or at market rate? Are we […] beating the market?"*

With such a cross-functional approach, SmoCo wants to solve one of its major contextual issues – unpredictability of demand and specifications. They call it **the 'pipeline' approach** – *"just to have the mechanism to say: do we miss anything or not"*: as a sourcing team member, supply management aims at gaining full transparency over the recurring and non-recurring demand of the internal customer. Supply management is then able to precisely address the continuation of recurring demand during planning time. For non-recurring spend, *"most of the functions they do not reinvent the wheel. [So we at SmoCo ask:] last year you did those activities, […] tell me which ones have been true successes, and if you plan to continue to make them? For the unsuccessful, do you plan to swap them to a successful one or do you plan to test something new? That's the type of interaction that we are looking forward to make happen"*. PhoneCo also implemented this rolling planning approach for their unpredictable, innovation-driven categories and established thereby a solid link between internal customers' needs and purchasing expertise. As a consequence of such a structured and jointly elaborated supply planning approach – applicable for direct and indirect material as well as for recurring and non-recurring spend – indirect categories gain a more prominent position and their corporate savings potential is recognised.

The results of these **supply planning** meetings must be recorded in a structured way. There are different, company-specific options for **documentation**, since each company needs to set a different focus, why a given list of issues to be covered is not advisable to be provided. In the case of PhoneCo, templates were designed for each strategic pillar, which listed the different issues to be assessed and the corresponding information in matrix-format. Then the question arose within the PhoneCo workshops: how to process this information? To capture the entire range of strategic potential, the structure of a SWOT analysis was applied, which is considered to be one of the most important strategic tools for extracting strategies (Ghazinoory, Zadeh, & Memariani, 2007, p. 99; Johnson, Scholes, & Whittington, 2008, p. 119). The category manager needs to be aware of internal strengths and weaknesses as well as environmental opportunities and threats for his particular category – derived from the supply planning discussions – to obtain the full picture about what he has to expect and how to prepare for it (Eßig & Wagner, 2003, p. 287; Singh & Deshmukh, 1999, p. 8). With this information, PhoneCo's category manager formulated a precise category strategy that made him capable of dealing with the forecasted market opportunities and challenges in a structured manner.

Here the last contextual issue for supply planning occurred: ◈ **Lack of consistently operationalised category strategies.** Category strategies are often abstract and high-level, which cannot be directly related to the daily supply business. Therefore, at PhoneCo, the strategic implications derived from supply planning were classified by means of the strategic portfolio analysis (Jahns, 2005, pp. 169-170), which translates strategy into a clear direction, along two dimensions: 'supply market attractiveness' – which opportunities does the market provide? – and 'purchasing position' – how adequate is supply management's competence to act on this market? (Figure 46). Four general strategic directions emerge: guarantee of availability (realisation of fast mover advantages), efficient processing (realisation of process improvements), exploitation of supply market potential (realisation of bundling effects), and strategic partnership development (realisation of purchasing networks).



Source: Jahns, 2005, p. 169.

Figure 46: Strategic supply portfolio analysis.

After this classification, PhoneCo's category manager had to **operationalise** this direction and translate it into **concrete initiatives** for his daily business. Otherwise, the strategic direction would be meaningless, since it would be too abstract. If the supply manager decides to pursue a strategic partnership development as best strategy, the initiatives he and his team are performing during the year, have to be supportive to the long-term achievement of this strategy. A set of general supply management initiatives is shown in Appendix H. Only through this strictly structured process, was PhoneCo's category manager able to fully understand his category, assess and analyse its future development, and prepare for it holistically. He became the true category expert – in the strategic as well as operating sense. However, to make solid statements about the planned savings potential in the sourcing team setting, concrete **savings potential** needed to be **assigned** to those planned initiatives. *"The point here is that the way that you declare the savings is very clear, you say for this project I will*

generate this amount based on this [initiative]", as HealthCo stated. Only through this coordinated four-step process (Figure 47) did it become possible at PhoneCo to report well-founded and reliable savings potential into the budgeting process.

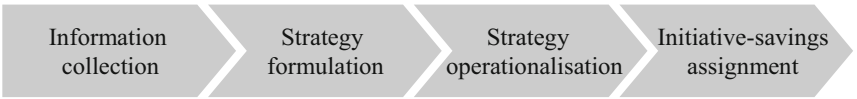


Figure 47: Four-step supply strategy process.

For global companies, this process is performed on a **global level**, whereas the realisation of the initiatives and the budgets, in which the savings potential needs to be integrated, occurs locally. *"[Global procurement] will negotiate the prices of each of the global categories. They will then issue detailed price assumptions to regional procurement and regional procurement will then send it to the different [local] factories. The factories then will work."* In order to make this approach consistent, SmoCo's supply managers publish within the corporate budgeting guidelines – in form of a so-called category catalogue for the indirect spend categories – their market assumptions, planned or negotiated initiatives, and the corresponding savings potential. BevCo plans to implement a similar approach: *"They [global procurement managers] send out a set of directives about the company's stance on oil prices, paper prices, fuel, cartons, and recruitment fees before the budget process starts. Then during budget presentations, any major changes to these directives need to be explained."* To maintain a common language, equal planning granularities, and process consistency for reliable savings results, the entire supply planning process needs to be well-structured, communicated top-down, but continuously reflected through systematic feedback loops.

Design Rule 2 – Supply Planning:
If supply management expects to be integrated into corporate planning processes as equally considered planning partner, in order to be corporately accepted as competent cost expert and challenger,

I[1] Obtain a thorough understanding of your category from the cost perspective through a solid and continuous analysis of your category structure, the distribution of costs and the drivers behind them;

I[2] Advance your operating purchasing expertise through the elaboration of a standard set of potential supply management initiatives, which is continuously adjusted and used in order to catch additional savings possibilities at a glance;

I[3] Implement cross-functional sourcing teams – ideally as a fixed institution, but at least during the planning period – consisting of supply management, finance, and the internal

customer, collecting, exchanging and discussing relevant planning information. Be aware that supply management, as recognised coordinator, has to be proactive and competent;

I[4] Follow – within this cross-functional setting – a pre-structured supply planning process that covers top-down strategic directions, and demand as well as supply issues. Collect the information systematically and make it accessible to all involved parties;

I[5] Develop from the supply planning information a solid category strategy, which gives top-level guidance for the business year;

I[6] Operationalise the strategy in order to make it transparent and concrete for the users and to perform target-oriented supply management initiatives during the year;

I[7] Assign savings potential directly to the planned initiatives in order to make planned savings tangible and to create the basis for later analysis reasons;

I[8] Establish clear top-down communication patterns of the supply planning results and the planned savings potentials, in case you have a global setting, in the context of the corporate budgeting guidelines. Establish systematic room for feedback for continuous improvement!

4.2.3 An Integrated Budgeting Approach – Design Rule 3

Design Proposition 3 – Corporate Planning Integration:

If supply management claims its budget-integrated savings should be considered an official part of its bottom line impact, jointly analyse the process cost reduction potential, plan cost savings, and include them in the budgets to obtain savings transparency before budget agreement by integrating supply management systematically and early on in the budgeting process.

Supply management definitely claims its planned savings should be considered as part of its bottom line impact. In practice, supply managers even tend to play games to get the maximum of their achieved cost reductions approved as savings at the end of the year – the full credit. They often have the possibility to delay planned savings until after budget agreement to report them as on-top budget savings, as mentioned by BevCo's head of purchasing. The mitigation of this principal-agent situation can hence only be achieved through maximum up-front visibility and transparency via integration – on the supply management as well as the business side.

The overall contextual issue group ◈ **Corporate resistance and lack of support of purchasing's integration** as well as ◈ **Operating view on purchasing – corporate perception** and ◈ **Unsystematic and one-sided collaboration** pose the major challenge to this advised integration. In the narrow sense, budgeting is about efficient capital allocation, and

this should be reason enough, why to integrate supply management early. But there are doubts regarding increased complexity if an additional function actively enters the process. *"It all depends on the maturity and granularity of your budgeting process"*, as SmoCo's purchaser argued. BevCo's financer summarised it as follows: *"Capital allocation right, but in real life it is all about direction, focus, strategy, and giving people who own the company an expectation of what it's going to be paying."* Thus, it is important for supply management to convey solid technical expertise, prove its strategic relevance, take the fear of irrational budget cuts, and elicit top management support. *"For me a good budgeting process is when I spend what I need to spend and when I have no problem to give back",* reflecting the purchaser's point of view at SmoCo. Therefore, the establishment of **cross-functional sourcing teams**, their corporate institutionalisation with **clear roles and responsibilities**, and the issuance of unambiguous **corporate savings guidelines** can be seen again as the preliminary steps to gain corporate acceptance and integration.

Then the question of integrating supply management in the corporate budgeting process occurred. Due to company-individual budget policies and settings, it is not possible to design a single best integrated budgeting approach. However, different best practices for certain budgeting situations are introduced as general guidelines (Table 8) to confront the contextual issue ◈ **Lack of corporate budgeting integration**. SmoCo and BevCo[5] can be introduced as best practices in cross-functional budgeting for direct material. The budgeting kick-off is the announcement of the **bottom-up** collected demand volume forecast by the business or global sales teams. They tell how much they expect to be sold. These volumes on stock keeping unit (SKU)-level are communicated to the internal customer as the technical account manager that develops the demand plan on a global category level. So far, all information is about quantity. *"Then there will be a number of questions about can we manufacture that? […] If demand is going up 20%, do we buy a new machine? If it is going down, do we release people or close down factories?"* Supply management and manufacturing, at SmoCo and BevCo forming the supply chain department, hence jointly work on the supply plan, taking the inventory policy, lead times, etc. into consideration.

At BevCo, purchasing enters the budgeting process already fully integrated four weeks after its initiation. As soon as purchasing has a clear picture of the forecasted purchase quantity, it concretises its category strategies on a material number level. In both companies, supply planning is an activity, performed by purchasing continuously during the year. *"Before the budgeting process started, we [BevCo's HoP] have almost independently come up with some top-level [savings targets] – what we think the projects and the types of savings that we think*

[5] Active in the FMCG industry, SmoCo and BevCo, as well as BeautyCo and HealthCo, are based on the standard costing model. The standard price is a fixed internal price for the finished manufactured good, based on its material and conversion costs and charged by manufacturing from the internal customer.

	Participatory Case	Focus Group	Focus Group	Observational Case	Observational Case
	PhoneCo	***BeautyCo***	***HealthCo***	***SmoCo***	***BevCo***
Timeline	May-September	March-November	June-November	August-November	October-February
Duration	5 months	9 months	6 months	4 months	5 months
Corporate layers	Corporate - Business Unit - local	Corporate - global - local	Corporate - global - regional - local	Global - local	Global - local
Budgeting approach	1. Bottom-up planning 2. Always top-down savings targets	1. Bottom-up planning 2. Often top-down savings targets	1. Top-down savings targets 2. Bottom-up planning	1. Bottom-up planning 2. Occasionally top-down savings targets	1. Bottom-up planning 2. Often top-down savings targets
Corporate planning level (direct material)	‣ Corporate ‣ Project level	‣ Global ‣ Product level	‣ Global ‣ Product level	‣ Global (& local) ‣ Product level	‣ Global ‣ Product level
Supply planning level	‣ Corporate ‣ Category level	‣ Corporate (& local) ‣ Category level	‣ Corporate (& local) ‣ Category level	‣ Corporate (& local) ‣ Global category level	‣ Corporate ‣ Category level
Cross-functional players	Purchasing controlling, purchasing, & internal customer	CFO/board, purchasing controlling, purchasing, & internal customer	‣ CFO/management accounting & purchasing: ‣ Purchasing & internal customer	Operations finance, purchasing, manufacturing, logistics, & internal customer	Finance, purchasing, manufacturing, & internal customer
Planned savings processing	‣ Directs: Budget cut ‣ Indirects: None	‣ Directs: Standard price decrease ‣ Indirects: None	‣ Directs: Budget cut ‣ Indirects: None	‣ Directs: Budgeting guidelines ‣ Indirects: Budget cut	‣ Directs: Standard price decrease ‣ Indirects: "More for the same"
Instance for planned savings approval	No	Yes	No	Yes	No
Best Practice for budgeting integration	‣ 'Shadow-budgeting' in case of no integration possible	‣ Stepwise implementation approach of purchasing's integration	‣ Integration in strict top-down budgeting approach	‣ Budgeting within institutionalised sourcing teams	‣ Budgeting within institutionalised sourcing teams

Table 8: Overview of the different budgeting process characteristics of the case companies.

– we can make, based upon the volumes as we knew them last year. The strategy was prior to the budgeting process." Thus, the time horizon for the material demand analysis lasts approximately two weeks.

In the case of BevCo, operations finance acts as direct partner with purchasing in inventory and hedging issues: *"My team works with procurement to discuss these issues and we go through every single Bill of Materials for packaging components and price them all up dependent on the units that we buy. We look at the forecast of the sales demand for each month and then it is discussed when we buy."* Afterwards, purchasing joins the cost of sales discussions with the internal customer and manufacturing to contribute to the process efficiency discussions from a supply perspective. Jointly, different savings potential scenarios are evaluated. In particular, the collaboration with manufacturing is important for purchasing, *"because, if you wanted to change a supplier or the product in any way, you cannot do that in isolation of the manufacturing people, since it can affect the machines"*. At SmoCo, operations finance also joins these teams to control and approve the planned initiatives: *"You need the finance people there saying: this is a saving and this is not a saving. […] So it is more like a referee."* With this structured approach, BevCo and SmoCo plan their budgets and savings in a transparent way on a corporate level.

So far, the planning and integration of the savings potential within the standard price and the budget, occurs at BevCo primarily on a global level. At SmoCo, however, the results of the planning discussions are consolidated in a global manual of reporting guidelines, which includes besides exchange rates to be applied etc., the global savings initiatives, with which local entities have to comply during their budgeting phase. This manual is distributed to the different local companies. The markets utilise this global manual to make their individual strategic and operating planning. In cross-functional teams, they need to build their budgets following the global guidelines and search for additional or altered savings opportunities on local level. Thus, at SmoCo, savings initiatives can be triggered and negotiated on a global as well as local level, and are complemented by initiatives launched by the corporate efficiency programme, covering the entire scope of efficiency improvement.

As a final activity – before manufacturing costs are finally reported – there is the question of what to include in the budgets, as already shown at BevCo on a global level: *"We have all these projects that are going on, and we are not going to put them into the standard price that goes to our commercial units as a saving from the budget to the prior year. The reason for this is that were not sure if the trial is going to be successful. If we put it in and the trial is not successful, then you are undercharging the commercial unit […]. So what you've got is all this list of projects and then it is between head of purchasing, operations, and finance to sit down and say: which of these projects do we believe are going to be successful, and which aren't. And then we have to put them as a central overlay."* Thus, within the sourcing team, a

risk assessment of each potential savings initiative must be conducted, and a maximum risk-level determined, to which an initiative with its savings potential is included in the budget. If each of the local entities has calculated its manufacturing costs in accordance with finance, outlined the complete range of planned local initiatives, and completed its budget draft, these are consolidated on the next higher level, either on a regional or global level. An entirely bottom-up approach is rather unrealistic, due to the tough market conditions. Therefore, it is very likely that the management board requires even tighter budgets, posing additional top-down savings targets. "*Markets send to us [operations finance] information, we analyse […] and present it to the management board, which says: […] we think the number is sustainable […] or too high, based on certain logic and rationale; and then we go to the markets and say: you need to cut this and come with a second version of the budget and that's it."* In the case of this so-called 'budget stretch', supply management needs to integrate parts of its central overlay, which – due to their elevated degree of event risk – have previously been kept out of the budgets. *"It's a game about relationship management between procurement, finance, and the factories",* as in BevCo's case, with supply management being willing to take more risk.

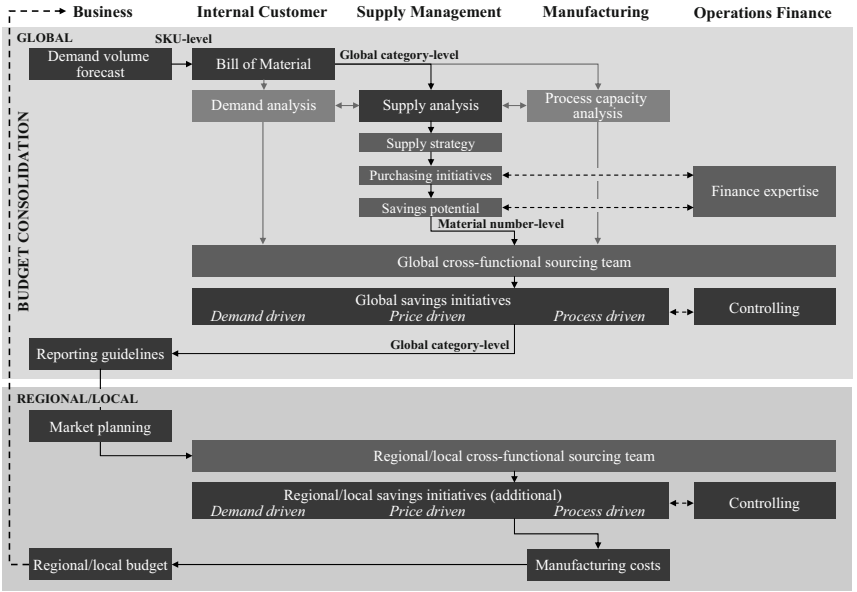


Figure 48: Integrated bottom-up budgeting process – Best Practice based on BevCo and SmoCo.

The best practice process, combining the process features of the two companies, is pictured in Figure 48. It is based on the relevant planning parties within a manufacturing company; hence, manufacturing functions as additional planning partner. Operations finance represents

a controlling instance, e.g. management accounting, for the operations unit. With this planning approach for the direct material, which leads to short planning horizons, 80% of the total supply chain savings can be solidly anticipated and integrated into the budgets, according to SmoCo's operations financer, where it has been implemented for six years. So far, BeautyCo has not fully implemented its savings measurement approach, since it is still in the conception phase. However, it is already noticeable that the general direction and ideas agree with this best practice approach: heading towards the establishment of a bottom-up/top-down budgeting approach, supported by cross-functional sourcing teams, and embedded within a clearly defined budgeting process timeline.

The other extreme to this bottom-up approach is HealthCo's **top-down process**, in which supply management is integrated as equal business partner. *"In order to participate in the planning process, finance needs to call us to search for savings potential."* HealthCo starts with a long-term strategy plan on a corporate level. The strategic directions and determined areas in which the particular business will grow, are communicated top-down for the annual plans, which also include the budget on the individual level. The budget starts with the top-line and then works backwards. *"Finance will tell the budget owner how much he can work with. Somebody wanted to increase the budget 5%, the reality is different. He can increase bits and pieces 5%, but the total number is going to be -4%. […] That is your ceiling. So you can weasel all you want. This ceiling is set and you cannot move an inch away from that. It's extremely top down."*

Supply management is already involved in the budget formation: finance comes to supply management for support concerning the required cost cuts, since it is considered as the only expert with full cost and supply market transparency. In this case, *"what we do is we look at what we think we will achieve next year. There are independent discussions which take place with the CFO counterparts and we agree on a target for next year, this is a high level initial target."* This overall savings target is based on the potential of the global category management projects. *"It is the savings potential theoretically: what we currently know in the current situation, the resources, and the long-term strategy, we think we should be able to achieve 4%. Last year it was 3.5% so based on factor A, B, C we think next year 4% is achievable."* This overall savings target, which was either approved or further stretched by finance, is communicated by finance top-down to the different budget owners on the different corporate levels without providing the idea of how to achieve the savings. *"We [supply management] are always the good guys and are never involved in budget cut issues."* Proactively, supply management substantiates the top-down savings target through concrete initiatives and communicates them to the internal customer. *"These are the large projects, which will generate approximately 60% of the gains. So the remaining 40% are going to be local initiatives. […] we give them the feeling that if we now already know 60% of the*

savings, where they're going to come from, there is a fair chance that by the end of the year, we will know where 100% will come from." Supply management collaborates with finance, helping to bridge required budget cuts and at the same time supports the internal customer to achieve them. It presents itself as an indispensable corporate function. *"But this needs to be done as a cross-functional thing […] sitting around a table, and being like business partners, so we have the same task, put in our input, and we're delivering something that everybody understands and is credible…including the savings. […] Define the savings as a team and identify a way to track them as a team, don't try to get that responsibility for yourself because later on you will get a credibility issue."*

Figure 49 illustrates the best practice for unchangeable top-down planning processes, based on HealthCo's approach. Despite the rigorous top-down approach, supply management is integrated early. This proves again that continuously advanced purchasing expertise and proactive behaviour function as the main prerequisites for corporate integration and recognition.

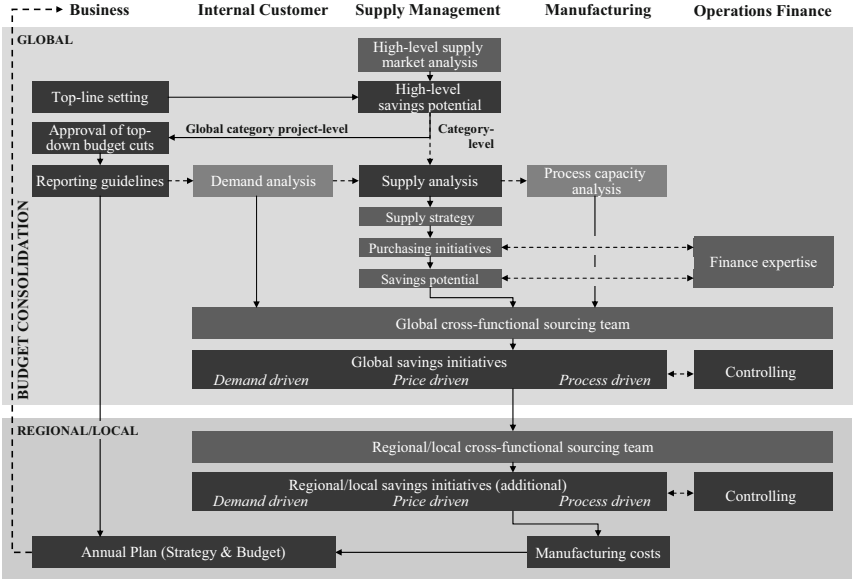


Figure 49: Integrated top-down budgeting process – Best Practice based on HealthCo.

Another issue, however, is if it is **not possible to integrate**, which can often happen for indirect material, as was the case for one indirect global category within PhoneCo. There were several reasons for that: too many budget owners, no category strategy relevance, unpredictable demand, no price-quantity budget, and above all, it was a political category, for which

the budget was cut each year by a certain percentage, regardless of the forecasted demand. Therefore, the development of the budgets for this category was pre-defined: each year -x%, neither above nor below. The numerous approaches by the ambitious category manager – to add value by making the budgets more precise and to avoid unplanned on-top expenditures – were constantly ignored. As a consequence, a so-called **'shadow-budgeting'** approach was designed within the case research setting (Figure 50). In the case of indirect material, no manufacturing unit is involved. Business announces the reduced, but fixed, budget for e.g. consultancy – following intransparent rationale. This is communicated within a guideline to the single consulting budget owners, supported by operations finance. In this official budgeting process, supply management cannot be involved for the above reasons. Nevertheless, to show its value contribution, supply management initiates its own operating planning process jointly with its internal customers in parallel – the so-called 'shadow-budgeting' process. Since supply management disposes of budget owner transparency and has identified the relevant contact persons as a measurement prerequisite, it is able to identify – based on a solid demand and supply analysis – joint category savings initiatives and with them an annual shadow plan, in co-existence with the official budget.

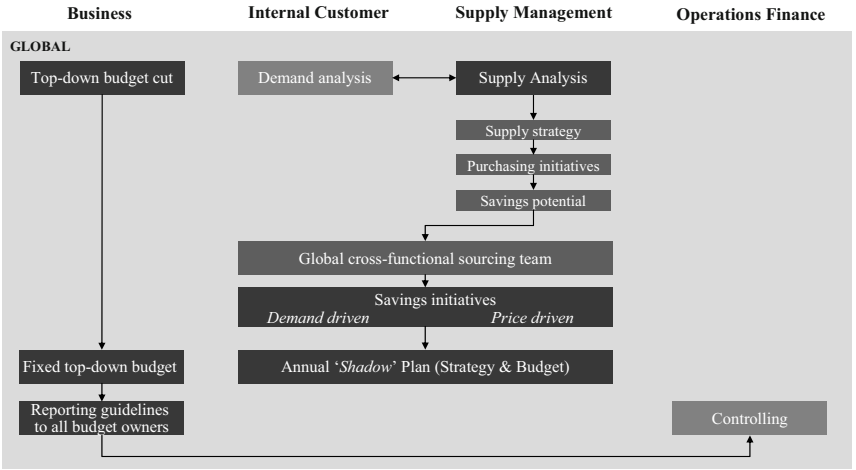


Figure 50: 'Shadow'-budgeting process for indirect material – Best Practice based on PhoneCo.

This indirect category at PhoneCo was budgeted within numerous cost centres. Nevertheless, the category manager conducted single-handedly comprehensive market analyses and formulated a detailed category strategy paper, consisting of multiple pages, which clearly outlined the strategic direction of his category for the next year. The purchaser perceived himself as strategic supply manager, responsible for the promotion of his indirect category within the

supply management as well as corporate setting. This example shows that – despite finance's integration resistance – solid supply management can be performed as long as the supply manager is ambitious and has realised the need to promote his category.

HealthCo thereby refers to a – for integration reasons – additional important process characteristic: *"Whatever the process is, it needs to be lean. So do things once and do it correctly. I think in all the budgeting processes there is a lot of back and forwards, wrong information, lack of details; so try to do it right the first time so you can be more efficient."* As soon as different people with diverging interests and backgrounds are involved, the degree of complexity increases. The fundamental idea of all three best practice processes – even though now distributed to direct and indirect material – can be applied to each category. Regardless, if the budget is bottom-up built based on solid market research, or vice versa, it is most important that supply management does this market research in any case and is collaborating closely and in a **lean and systematic** manner with internal customers, manufacturing, and finance. Through this comprehensive knowledge and transparency, supply management will be able to identify the maximum savings potential up front as part of its total budget effects.

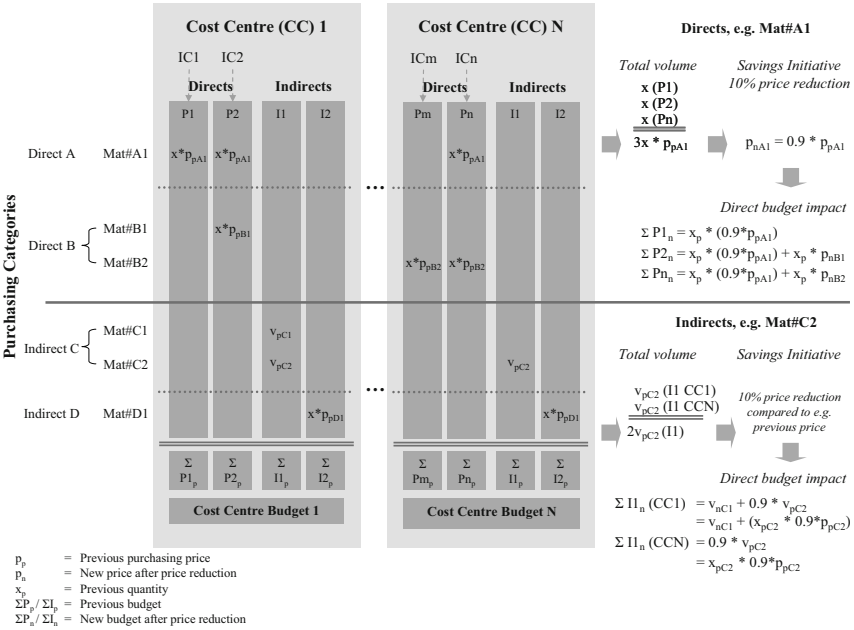


Figure 51: Further elaborated translation matrix for the savings-budget link.

Figure 51 shows the further developed **calculation logic**, based on the translation matrix, to establish a **savings-budget link** during the planning period, regardless of the budget type – price-quantity (Mat#A1) versus volume budgets (Mat#C2). Supply management enters the budgeting discussions with knowledge about the general demand volume from the internal customers, the previous year price in the case of recurring spend or the expected price obtained from quotations etc. for non-recurring spend, and the further expected cost developments. These assumptions, which influence the budget effects baseline, have to be outlined in the supply planning documentation. After having collected the entire demand for the particular material number or category and set the baseline price as the expected price without any savings initiatives, supply management identifies the savings potential per unit for the following business year. Based on the quantity and following the translation matrix, the unit price reduction for direct material can be directly charged to the budget of the specific internal customer.

$$\textbf{Planned Budget Effects} = (\textbf{Baseline Price} - \textbf{Planned Price}) * \textbf{Planned Quantity}$$

For the indirect material, which is not based on a strict price-quantity logic, the budget link can be created based on the overall volume, which is reduced by a percentage,

$$\textbf{Planned Budget Effects} = \textbf{Baseline Volume} * \textbf{Savings in \%}$$

or retrospectively transformed into a price-quantity logic, with the previous unit price or the quotations unit price as baseline price:

$$\textbf{Planned Budget Effects} = (\textbf{Baseline Price} - \textbf{Planned Price}) * (\textbf{Baseline Volume} \div \textbf{Baseline Price})$$

To establish this price-volume logic in indirects on a sustainable basis, BevCo managed to unravel with the internal customer the marketing budget. It became clearly visible, of which elements the demanded budget was composed, and the budget link was established based on the price-quantity logic, even if the result was the same amount of budget for more external service to be purchased. This was the first step towards confidence and partnership between internal customer and supply management. The answer from BevCo's head of purchasing to the question, if this approach was possible for all indirect categories as well, was: *"Yes, it is just a matter of time and resources."*

In addition, the following is most important from HealthCo's perspective to achieve the budget link: *"In 2002, we saved the money; we went to the budget holder and said: look we saved you money and now we can take the money away. But that was chaos. So we said never again. Now we work with finance, we say what we're going to save, they remove it and it becomes transparent to everyone and afterwards we just offset the budget cuts. The sequence how you cut budgets is irrelevant, as long as you remove it somehow from the budgets."* To do budget cuts in a structured, not arbitrary way, BeautyCo as well as SmoCo have installed with operations finance, which accompanies and monitors the entire planning process as part

of the sourcing team, an instance which approves the integration of the planned savings into the budget, in compliance with the corporate reporting guidelines.

Design Rule 3 – Corporate Planning Integration:
If supply management claims its budget-integrated savings should be considered an official part of its bottom line impact, to obtain savings transparency before budget agreement,

I[1] Establish up-front visibility through the issuance of measurement guidelines and corporate transparency through the creation of cross-functional sourcing teams;

I[2] Be ambitious and aim at supply management's full budgeting integration; but keep in mind the increasing degree of complexity through an additional budgeting participant;

I[3] Find alternative ways, such as 'shadow'-budgeting in the case of non-achievable integration, for providing evidence for your entire savings scope – planned and on-top;

I[4] Design a standard planning process with a timeline, and clearly defined roles and responsibilities of each planning participant – make it lean;

I[5] Be transparent on your calculation procedure through the clear documentation of your assumptions and baseline prices;

I[6] Assess the event risk of the savings potential of each planned initiative before its integration in the budget;

I[7] Pro-actively cooperate with operations finance and install a monitoring instance for approving the planned savings to be integrated into the budget.

4.3 From Planning to Measurement – A Structured and Integrated Budget Effects Measurement Approach

Since this chapter also discusses and designs best practices and design rules for two additional design propositions, the structure of 4.3.1 and 4.3.2 resembles that of the previous chapter. Having completed the best practice design of a comprehensive supply planning process and supply management's integration into different corporate budgeting approaches, the connection to the final measurement process is achieved through a consistent realisation phase. The design of the individual measurement steps is finalised through their consolidation in 4.3.3. Referring back to the second design draft of the budget effects measurement process, a final draft is presented. It is called final draft, rather than final process design, since it presents state-of-the-art, rather than claiming completeness. Since the measurement of budget effects is a new and complex topic, research has been initiated but will require further efforts in future.

4.3.1 Realisation and Monitoring – Design Rule 4

Design Proposition 4 – Realisation & Monitoring:

If there is criticism regarding the substantiality of the reported savings, consistently track and monitor the realisation of the plan to achieve transparency of the realised savings and their drivers through the direct link between the realised budget effect and its underlying saving initiative(s).

'Power-Point' savings have been a widely used expression for the savings reported by supply management. Almost each case company, especially those that were not yet as mature in terms of savings measurement, were familiar with the confrontation of this criticism. *"One thing is to plan savings and the other one is to ensure that you measure and track them, so you prove that you deliver"*, as stated by HealthCo. The context of this design proposition was confirmed by practice.

One major contextual issue, which contributed to these doubts against the measurement results, was ◈ **Ambiguous savings tracking**. To obtain reliable tracking results there are two major features necessary: a **structured realisation tracking logic** and a **tracking system**, which is integrated or even part of the savings measurement system and continuously captures the picture of the realisation process. *"That is the process we're getting into now in terms of a monthly review basis with finance […] to have an argument with the client about whether those savings are budget-delivered or whether they are power-point savings",* as supported by BevCo.

Figure 52: Process from initiative definition to initiative realisation.

Such a tracking logic was also implemented at PhoneCo, since it was realised that – regardless of a top-down or bottom-up budgeting process – planned initiatives have to be consistently implemented. Figure 52 shows the five-step process which was designed for PhoneCo: as a first step, finance and the internal customer – following some top-line rationale – often define high-level savings targets. This first step only applies in the case of a top-down budgeting approach, otherwise, the initiative planning phase starts with the bottom-up substantiation of the planned savings potential. This means, that supply management based on the feasibility and event risk of certain initiatives evaluates savings potential. As the next step, these bottom-up savings targets are jointly discussed with, and eventually approved by, top management and committed by supply management, as supported by BevCo: *"Savings initiatives are approved by operations finance and initiatives documented etc. and then we put*

it into the corporate entity and then they say: you need to do more. […] So you have two cycles of savings: the ones we come up with and the ones that are semi-enforced." After this approval step, the initiative realisation phase begins, during which the planned activities are implemented. The final step is the full implementation of the initiative and the realised saving. However, the realisation phase requires further sub-division to be able to have control over the following situation, which occurred at BevCo: *"They [operations finance] make forecast to over- or under-deliver [the savings target] and then we will have an actual. Because during the year, everything changes and things move around all over the place, the actual may deliver some things that we hadn't considered, some new opportunities have risen, may not deliver some of my aspirations, but we will deliver something."* Thus, realisation tracking by initiative, monitoring the individual degree of realisation, must be implemented. At PhoneCo, this process was built upon the degree of realisation-logic (Figure 53), also applied by BeautyCo.

The realisation of a savings initiative is subdivided into five different stages that show the progress of the individual initiative. For each step, accomplished budget effects are calculated depending on the certainty about price and quantity.

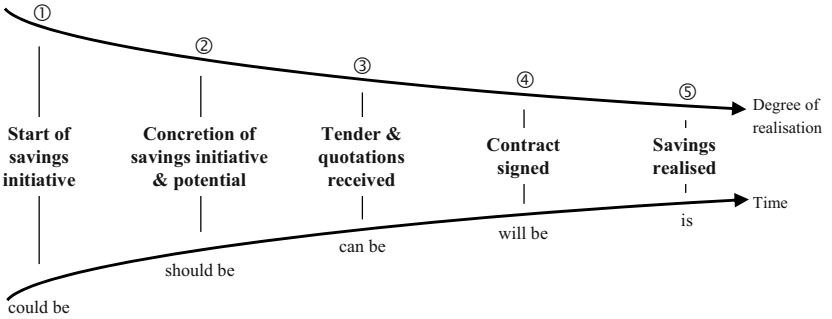


Figure 53: Degrees of Realisation-logic.

Degree of Realisation ①: This corresponds with step four in Figure 52; a file is started for each initiative with all details, such as initiative description, who is responsible, and type of expected savings. At this point, the planned budget effects **could be** reached through this initiative, but success is still general. Therefore, only generic, plannable effects through the price-, demand-, or process-lever can be indicated:

$$\text{Planned Budget Effects} \Rightarrow \text{Plannable Effects}$$

Degree of Realisation ②: Details of the initiative with its different levers are outlined. At this point, planned budget effects can be determined based on planned figures and hence **should**

be achievable. The planned price – anticipated by supply management – deducted from the baseline price – the originally expected price – results in the planned budget effects per unit. The quantity is also based on planned figures:

$$\text{Planned Budget Effects} = (\text{Baseline Price} - \text{Planned Price}) * \text{Planned Quantity}$$

Degree of Realisation ③: Planned become forecasted budget effects, which **can be** achieved, since after a tender launch, quotations were received, based on a certain forecasted quantity. Thus, price and quantity assumptions are based on concrete forecasts:

$$\text{Forecasted Budget Effects} = (\text{Baseline Price} - \text{Forecasted Price}) * \text{Forecasted Quantity}$$

Degree of Realisation ④: The contract is signed. This provides further budget effects certainty, since at least those price reductions as stated in the contract in comparison with the baseline are certain. Thus, the contracted budget effects **will be** achieved. Depending on the contract nature, the quantity can either also be contracted or remain forecasted:

$$\text{Contracted Budget Effects} = (\text{Baseline Price} - \text{Contracted Price}) * \text{Forecasted Quantity}$$

Degree of Realisation ⑤: The full implementation of the initiative is the final stage. Since only at this stage are the actual price and actual quantity figure certain, they may be entered into the equation – turning contracted into realised budget effects. Thus, savings may only be reported as such, when they have completed this fifth stage and **are** certainly delivered. In addition, the impact of contingency factors has to be considered. These are effects, e.g. 9/11, which could neither be forecasted nor planned nor lie in the responsibility of supply management and the sourcing team:

$$\text{Realised Budget Effects} = (\text{Baseline Price} - \text{Actual Price}) * \text{Actual Quantity} \pm \text{Contingency Factors}$$

With a system-integrated degree of realisation logic, it is possible to differentiate between the implementation of planned and on-top savings initiatives, since they are indicated as such in the tool. At a glance, the supply manager is able to retrieve all required data about the status of the different initiatives, the levers, and the savings potential – planned, forecasted or already realised. *"They prepare the system; it goes down to what initiatives are you working on, what is going to be their impact on the budget of the cost centres, where in the budget causes it an impact, etc."*, as HealthCo explained. If certain planned initiatives were realised with an unplanned or sub-optimal effect, the supply manager gains the flexibility to react and introduce counteracting measures. As SmoCo said: *"It might be for instance that you have planned something and then it doesn't happen."* From BevCo's perspective, *"we would be able to track that and say: You're overspending to budget."* Therefore, the concept of a rolling monitoring-cycle was developed and implemented at PhoneCo, which is pursued continuously during the year (Figure 54).

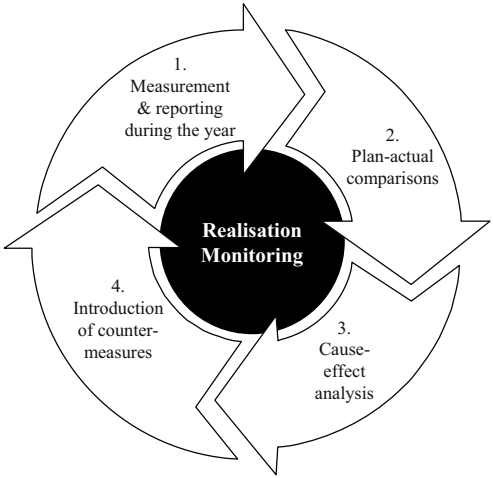


Figure 54: Rolling realisation tracking and monitoring cycle.

This process is aligned with the tracking by initiative system and conducts plan-actual comparisons, based on the current degrees of realisation. If significant plan-actual deviation can be detected, explicit cause-effect relationships must be explored and analysed to introduce problem-oriented countermeasures if necessary. At PhoneCo, this happens quarterly. This enables the supply manager to proceed with the structure and rigour established during supply planning also during the realisation and to present substantiated savings measurement results by the end of the year, since the movements were monitored and coordinated.

Another relevant contextual issue, which was mentioned by each case company, in this realisation context is ◈ **Unofficial savings reinvestment**. At BeautyCo, one of the positive side effects of the realisation tracking system is that finance gains budget transparency. During the year, *"procurement, which has transparency on the successes through the reporting tool, would be systematically asked what they expect as saving in the realisation process"*. This opinion was also observable at BevCo: *"For purchasing, it is about tracking and understanding what their savings are. […] We [operations finance] capture that saving, we know where it is, who is the budget owner - so it is the marketing team, we get my finance person to speak to this team about: We delivered this, what are you going to do with it?"* Bottom line impact can only be accomplished if budgets are reduced and, if required, afterwards officially re-allocated. If on-top savings are internally and unofficially reinvested, no budget impact can be recognised due to the lack of official reporting. Therefore, in order to maintain high-level savings transparency during the year and to make on-top savings hit the

bottom line, a **systematic savings-reinvestment policy** and process have to be established. *"Savings are either consciously reinvested or frozen"*, as HealthCo's purchaser stated.

One concept that was applied within BevCo, HealthCo, PhoneCo, and SmoCo was the so-called **'pot'-concept**. At HealthCo, planned savings are immediately cut from the budget. However, there are certain savings initiatives, which are ring-fenced or frozen. They remain in the budgets, but are indicated as potential savings, which are expected to be delivered. BevCo has a special account, called 'central overlay', in which those potential but risky savings are booked as on-top savings. For indirects, SmoCo implemented the following approach: If on-top savings are generated through unplanned initiatives during the year, those savings are cut from the budgets and booked into a 'pot'. Every function has the right to claim parts of this pot if it officially applied for additional funds. PhoneCo applies such a continuous budget re-allocation process for its innovation-driven categories. During the budgeting period, the budget owners prioritise and report their financial resource demand for project implementation. Since business is fast moving and unpredictable, demand changes constantly. Thus, projects have to be prioritised repeatedly and funds re-allocated on a quarterly basis during an institutionalised process. Finance, internal customer, and supply management jointly decide about the prioritisation and feasibility of the single projects, and monitor and determine opportunities of reinvestment.

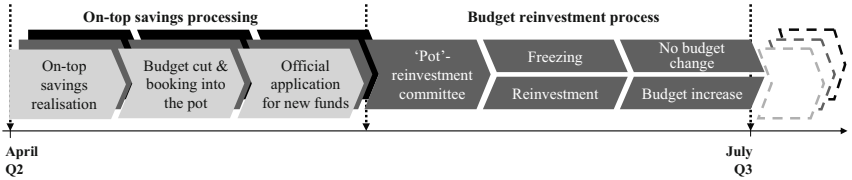


Figure 55: The official 'pot'-reinvestment process – Best Practice.

A best practice process, based on the individual case study approaches is shown in Figure 55. If savings are achieved during the year, this amount has to be taken from the particular budget and parked in a special account or 'pot' before any decision is taken concerning reinvestment or freezing. As a consequence, transparency and control over the individual budget movements are achieved and supply management's on-top savings have a budget impact by definition. If budget owners require new funds during the year, they need to apply officially to the pot. By the end of the quarter, the pot has to be processed through an official re-allocation process led by operations finance in cooperation with the internal customer and supply management. In this committee, joint reinvestment decisions are taken based on economic rationale, such as feasibility, project return, etc. Depending on the prioritisation, money from the pot is reinvested or frozen. *"That was just creating some transparency around the question: are we acting the way we budgeted? And let's bring some cost awareness around*

that. […] It's not because we are making savings, you're going to buy more. This was a big break through to say: Guys, we are not gambling, we are making this for supporting information to say 'yes' or 'no', if we do this or not." Thereby, SmoCo's purchaser mentioned the resistance by the internal customer, but he argued the following way: *"It should be a no-brainer. You have a budget with five elements. I do an initiative on one element and we save one million euros. I don't touch the rest of your budget by removing this. So what are you going to do with this money? You don't need it. If we have a strong and mature mechanic, with the three parties working together, I am not damaging your [internal customer's] ability to deliver."*

Design Rule 4 – Realisation & Monitoring:

If there is criticism regarding the substantiality of the reported savings, to achieve transparency of the realised savings and their drivers,

I[1] Design and implement a consistent initiative tracking system, which can be used on a daily basis. All initiative-relevant data can be seen at a glance for monitoring and coordination purposes;

I[2] Introduce a tracking logic that follows the degree of realisation-concept, which clearly shows the realisation status of the single initiative as well as the resulting budget effects. Be aware of clear formulation and avoid overlaps by definition;

I[3] Implement a rolling, multi-level savings tracking and monitoring cycle, which focuses on plan-actual comparisons and the introduction of countermeasures as a coordination tool;

I[4] Maintain your budget effects control and transparency during the year by removing on-top budget effects from the budgets after having reached the final degree of realisation and allocating them on a separate account;

I[5] Establish a transparent and official reinvestment policy or process, in which finance and the budget owner, but also supply management, are proactively integrated and jointly decide about the usage of the on-top budget effects.

4.3.2 Measurement and Reporting – Design Rule 5

Design Proposition 5 – Measurement & Reporting:

If there is a lack of trust in the reported measurement results on the side of supply management's stakeholders due to ambiguous savings definitions and processing, clearly define and follow a fixed savings measurement and reporting approach, which coincides with supply management's advanced role perception, to obtain stakeholders' savings approval by providing transparency of the applied measurement practices and access to comprehensible and unequivocal reporting guidelines.

Purchasing at HealthCo faced the criticism that it formulated its own measurement rules, designed the process by itself, measured by itself, and finally interpreted the savings results by itself. Neither finance nor the internal customer had the opportunity to check the appropriateness of the reported savings. This situation of non-transparency, often complemented by ambiguity especially in terms of savings definition, was observed in most of the case companies. Apparently, this fundamental measurement issue – measurement itself – still posed a major challenge in the corporate context.

One group of contextual issues was the ◈ **Incomplete scope of defined and applied savings measures**[6]. However, before the savings scope can be concretised, the **general understanding of savings** has to be clarified. Irrespective of completed implementation, all case companies agreed upon the following general savings perceptions:

- Savings must be the result of a specific project or initiative,
- Savings must be accomplished through expertise, not along market movements, and
- Savings must have an impact through cost reductions on cash-flow or the P&L statement.

However, here the agreement stops. SmoCo states in the context of its integrated supply chain concept that *"savings are only considered as savings if they have a long-term effect"* and that they *"can come from any function involved in the supply chain and involved in budgeting"*. BeautyCo, in contrast, says that *"only purchasing can deliver savings"* and HealthCo has the opinion that as long as *"price reductions [are] involved"*, it is a saving, regardless of long-term productivity or cost-down motivation. If a saving is jointly owned or clearly split between the functions, and if it has to be of long-term character rather than a quick win, depends on the individual company culture. There is no clear single-best solution to it.

However, it should be kept in mind that also measurement and reporting should be aligned with supply management's ambition to show its full range of value contribution and be considered as integrated business partner. It is hence advisable to report long- as well as short-term savings – separately, if necessary; and if the company targets at a joint and cross-functional planning and realisation process, it appears to be counter-active, if suddenly, when it comes to the issue of savings ownership, functions struggle for personal rather than **joint laurels**. *"Procurement is interested in what is their personal contribution, but we try to avoid having fights about the savings. From a finance perspective, we always say that it's the company's savings. […] Also the procurement guys realise that it is difficult, when you have all these people working on these things. So I think they try to steer away from it as well"*, as SmoCo's operations financer concluded. In SmoCo's context it has to be kept in mind,

[6] See Table 7: 'Focus on price reductions', 'Lack of process cost perspective', and 'Missing definitions for certain cost savings types'.

however, that supply management is already well-established as cost expert within cross-functional sourcing teams. They have already proven that they add to the corporate value.

Another controversial aspect is the treatment of **process cost savings**. *"It is not just looking at can I negotiate better prices with x and y, but also: can I put a new deal in place with a new supplier that can give me a cheaper service, so I change the policy. So what procurement also includes [in its savings], is how they drive the demand."* Hence, HealthCo equipped purchasing with a price-, process-, and demand-savings lever. An example from SmoCo, however, shows the reason for the controversies between procurement and business: *"If we currently got a 2% rate of waste on a specific process by changing a supplier, maybe you don't save anything on the price, but the new material makes the process more efficient with less waste. We do define that you can record that as a saving. If you can calculate it. In the 5 years that we've run the programme and actually calculated savings, I am not aware of a lot of waste savings that have been reported."* PhoneCo and BeautyCo, currently, rarely report specification changes as savings for the same reason. HealthCo listed price reduction as a clear savings prerequisite. *"It is not just price"*, as stated by SmoCo, this is too narrowly considered. Therefore, HealthCo added, *"we move further from just saving the price, we also influence the process to get savings and influence the demand to get processed, so I think it will get more complicated later on"*. This discussion shows that process and specification changes are clearly considered as part of supply management's success and that they should be reported as such. However, the progress of measuring and reporting process cost reductions as official savings is still in its early stages.

According to the measurement process, designed and outlined so far, the scope of savings definitions should comprise the following:

- **Price Reductions** – are based upon supply management's skill set to achieve through diverse initiatives a lower unit price for the same material compared to the baseline price.
- **Process Cost Reductions** – are based upon supply management's skill set to deliver through diverse initiatives the same value to the internal customer, however, with specification changes, revised purchasing policies, or increased process efficiency.

Price and process cost reductions describe the levers through which supply management is able to accomplish savings. However, it is still not absolutely clear, how those savings can be measured.

This needs unequivocal measurement rules to face the next major group of contextual measurement issues: ◈ **Ambiguous savings measurement and reporting**[7]. The first aspect

[7] See Table 7: 'Ambiguous savings dimensions', 'Biased baselines', 'Lack of business-year savings relation', 'No reporting of price increases', 'Purchasing's exclusive measurement approach', and 'Unclear savings ownership'.

that requires consideration is the definition of **one fixed measurement baseline**. As shown in Figure 11, the exclusive comparison of old and new prices does not reflect supply management's entire range of achievements. Therefore, the expected price, which truly reflects the forecasted market price conditions – either price increase or decrease – based on the solid supply planning results, must function as fixed measurement baseline for any type of saving. This will be called **baseline price** in the following (Figure 56).

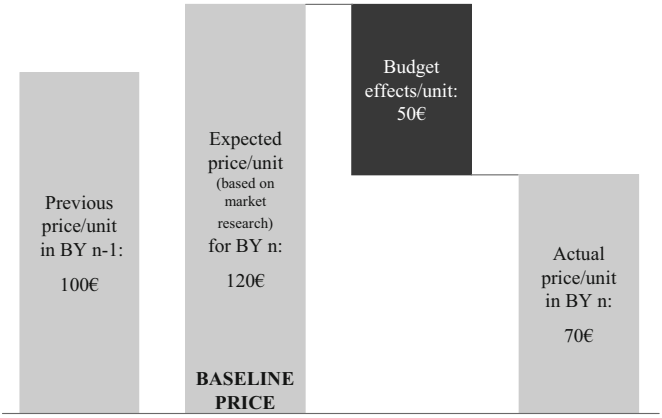


Figure 56: The full range of supply management's budget effects.

However, to obtain a meaningful baseline price, valid reference points, which are shown in Figure 57, need to be defined separately for recurring and non-recurring spend:

Recurring Spend: In this case, a previous price is always available, which forms the starting point for the cross-functional budgeting discussions and upon which the market assumptions for the following year are built. All case companies use the previous price as the only valid reference point for recurring spend.

Non-Recurring Spend: Since for the non-recurring spend no previous price is available, another reference point has to be created artificially, which causes major discussions and a broad range of solutions, and is again largely company-culture dependent. Most case companies, however, use the following reference points: market index, reference units, or quotations, in this order of prioritisation, which will be explained below.

Another apparently important savings differentiation factor is **cost saving versus cost avoidance**, especially for financial reporting purposes. However, so far, there is no common definition or corporate usage of a methodology for the 'soft' cost avoidance and the 'hard' cost savings (Conant, 1986, p. 51; Everard, 2005, p. 60). *"We do not have any clear rule for this"*, as SmoCo's operations financer commented. Following Ashenbaum (2006, p. 3), "cost

savings are understood as tangible bottom line reductions resulting in saved money that could be removed from the budgets or reinvested back to the business". They should be on a year-to-year basis and based on actions that can be directly traced to the P&L. However, BeautyCo argues that *"if purchasing had not avoided the cost increase, the budgets would have needed to be higher"*. This shows that this definition is not unambiguous either. Looking at cost avoidance, it represents the more intangible part of cost reductions. Everything that cannot be clearly measured as cost savings is cost avoidance – it is open-ended and difficult to quantify (Ashenbaum, 2006, p. 3). Since apparently cost avoidance does not have a budget impact and is not accepted as savings due to its unclear nature, most of the times cost avoidance does not play a significant role in supply management's incentive system. So doubts emerge regarding the added value of this differentiation, since apparently there is neither a clear borderline nor definition.

Supply management aims at getting full credit for the savings that were accomplished during the year, including the savings potential that was already integrated in the budgets – regardless of cost avoidance or cost saving. Both types have a budget impact: they either led to lower budgets, or lowered or at least re-allocated them more efficiently during the year. To show this full range of savings – based on the expected price as fixed measurement baseline – the differentiation between planned budget effects – planned and measured before budget inclusion – and on-top budget effects – measured at the end of the year, gains relevancy.

Planned Budget Effects = Baseline Price – Planned Price

On-Top Budget Effects = Planned Price – Actual Price

Figure 57 provides a methodological overview for the different reference points and budget effects on a savings per unit basis.

1. Previous Price: When the previous price is available, it functions in adjusted form as baseline price. If this expected price is above the previous price, supply management also gains full budget credit for the offsetting of price increases, which was considered to be cost avoidance before. If the price is expected to be below the previous price, supply management is no longer able to report 'opportunistic' savings as a consequence of favourable market conditions.

2. Market Index: In case of non-recurring spend, the market index, as the most objective reference point, represents the expected price, and functions as first choice baseline price.

3. Reference Unit: To use the previous standard price of a similar reference unit as baseline price, it has to be adjusted corresponding to the specifications of the particular purchasing object. HealthCo develops in such cases internal baskets: *"For e.g. promotional items we did*

the market basket price for a cheap, medium and high-level pen. These were all prices that HealthCo has paid across Europe. […] We established the average European price as basket."

4. Quotations: If neither of the two reference points applies, a market price has to be created through the request for quotation. *"If you do something completely new, you have to do some sort of quotation system"*, as BevCo said. Through the comparison of several obtained quotations, a market price can be approximated. They function as a least preferred reference point for non-recurring spend, since they tend to be biased. To reduce this risk, not the lowest or average quote will function as expected price or baseline price, but the best non-negotiated quotation – low price, but also best quality. Best quotation in this sense means that supply management and the internal customer jointly determine the best quote. With this joint decision-making, the principal-agent problem is mitigated. In addition, if a monitoring instance is installed, which checks the reasonability of the reported savings at the end of the year, the misuse of this reference point is expected to be minimised.

In all cases, the process cost perspective applies: costs of products as well as processes are considered in the determination of the baseline and the reference points.

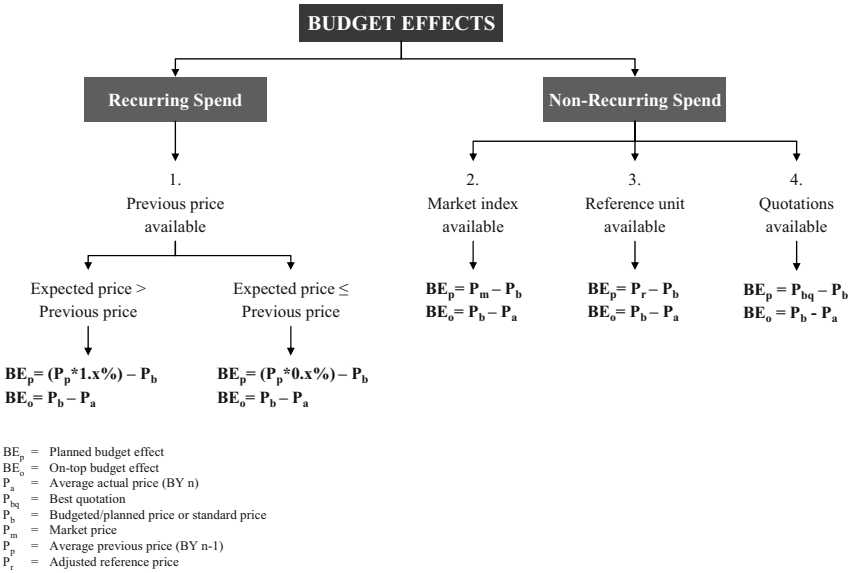


Figure 57: Budget effects measurement methodology.

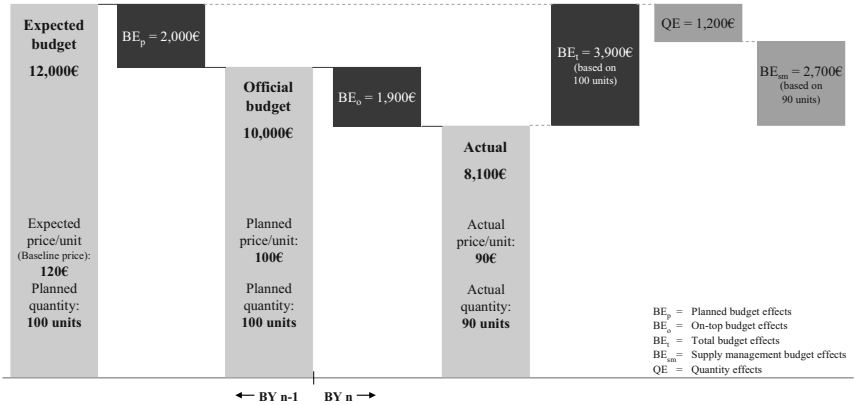


Figure 58: Total versus supply management's budget effects – Calculation process.

The final savings calculation process is illustrated by means of a measurement example (Figure 58). After having conducted solid market research in the cross-functional setting, a planned quantity of 100 units is determined by the internal customer and 120€ unit price is expected by supply management. Based on planned savings initiatives and assessing their event risk, it is jointly decided to fix the budget at 10,000€ on an unchanged quantity and at a lower unit price of 100€. This leads to planned budget effects of 2,000€. During BY n, additional budget effects of 1,900€ were realised on-top, which led to an actual of 8,100€. Those on-top budget effects, however, were achieved through the cost and demand lever. Since supply management influences only the cost lever directly, the demand-induced budget effects need to be deducted. Structural effects as third optional lever only need to be excluded from the total budget effects, when they were not triggered within the sourcing team. Since it is intended to have all product and process experts within the team setting, the focus needs to rest upon the offsetting of the demand lever. Thus, the original demand assumptions have to be adjusted through standard costing methods, to be able to compare like with like. As a final result, **supply management** achieved 2,700€ as **budget effects**, which are based on the 90 units order volume and fully accountable to supply management's achievements.

What has not been considered in the above example are **contingency factors**, such as 9/11 or environmental incidents that had a significant influence on the sourcing outcome, which could neither be anticipated nor avoided by supply management. Those effects have to be offset in the budget effects calculation as well (Appendix J), as supported by HealthCo. The definition of contingency factors has to be clear in advance and may only be applied in exceptional cases, not simply to provide the possibility for supply management to escape from its entrepreneurial and corporate responsibility.

This calculation approach is dependent on consistent realisation tracking during the year to have full transparency about the realisation of the planned initiatives versus required on-top activities and to achieve meaningful results. Thus, at BeautyCo it is one of the tasks of operations finance to monitor and challenge reported savings. The same is installed at SmoCo within the so-called **'signoff' process**. Also BevCo plans to introduce such a savings challenger function, which is known at HealthCo as the random compliance check.

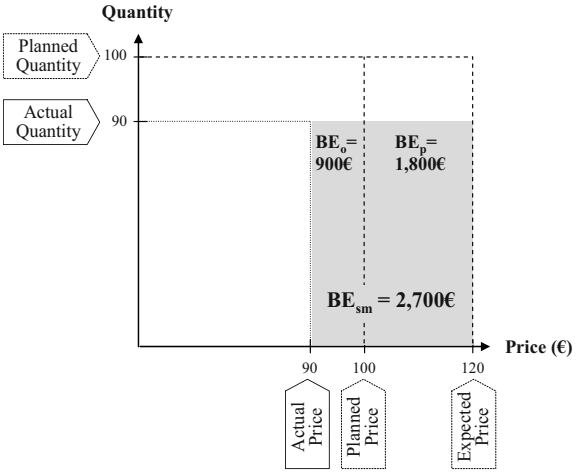


Figure 59: Supply management's budget effects – Graphical solution.

In order to correspond to financial reporting standards, budget effects need to have a clear business-year relation. Although planned budget effects are based on the total planned volume, total budget effects may only be accounted for the actual invoiced order volume of the particular business year. This is illustrated graphically in Figure 59.

	BY n	BY n+1
Case 1:	100 units delivered and invoiced → 100% P&L effects	No effect
Case 2:	60 units delivered and invoiced → 60% P&L effects	40 units delivered and invoiced → 40% P&L effects
Case 3:	60 units delivered → 0% P&L effects	40 units delivered and 100 invoiced → 100% P&L effects
Case 4:	60 units delivered and 100 invoiced → 100% P&L effects	40 units delivered → 0% P&L effects

Table 9: Business year relation in the case of a single or multi-year contract.

The establishment of a clear business-year relation based on the invoiced order volume is shown by means of four different cases, for which the budget was allocated in BY n-1 entirely for BY n (Table 9). This approach is also applied within SmoCo as the so-called **'carry-over effect'**. In this context, there are two special cases, which have to be considered: framework contracts and CAPEX investments.

For **framework agreements**, there are three options for savings processing (Figure 60). Option 1 appears at first sight the most reasonable approach. However, as discussed in the focus group setting, operations finance is not willing to approve budget effects for a framework agreement after BY 1, since this new, lower price will already be considered as the previous price on which the new baseline is built for BY 2. Thus, it cannot be reported as savings any more after BY 1.

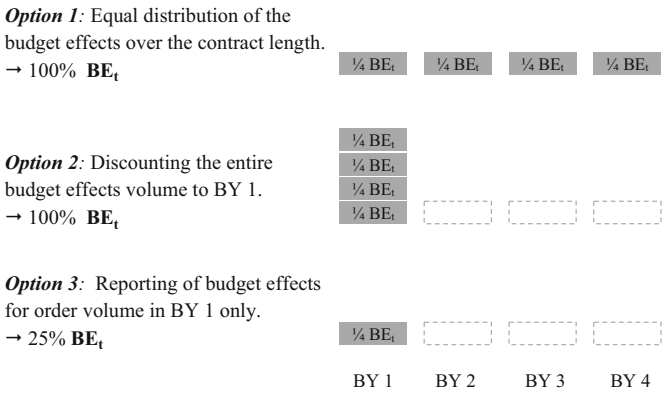


Figure 60: Three options for accounting budget effects in the case of a 4-year framework agreement.

Alternatively, the entire amount of budget savings, based on the contract volume, could be discounted to BY 1. However, this would lead to a great amount of savings for BY 1, which is in no relation to the years when no framework contract was negotiated. In addition, due to the discounting in Option 2 and the required compounding in Option 1, the total amount of budget effects alters and does not reflect efforts any more, which is not allowed in terms of financial reporting. Hence, Option 3 is the only way to report budget effects of framework contracts correctly, where the budget effects are only reported in BY 1, based on the corresponding invoiced order volume. This option, however, grants only 25% of the entire budget effects as supply management success, but represents budget effects versus efforts accurately. The bias that supply management's interest to negotiate framework contracts might decrease or that the order volume in BY 1 is manually pushed, has to be offset through

the sourcing team setting. Therefore, the focus group companies agreed on Option 3 as most valid option.

Even though CAPEX is out of the scope of this elaboration, the processing of budgets effects from **CAPEX investments** will be discussed shortly. At SmoCo the full budget effect volume is accounted for the year in which the investment is done – as cash flow savings. Those savings can also be considered as budget effective in the sense that the project owner disposed of an investment budget for this particular good for this particular business year. Therefore, any saving on this investment good had a direct impact on this project budget, limited to this business year. However, there is no full P&L impact. The P&L impact of these investment savings is spread across the depreciation period. Therefore, in the case of CAPEX-sourcing, there has to be differentiation between (1) cash-flow savings, which are accounted fully in the particular business year, (2) budget effects, which are also accounted fully in the particular business year and hence not directly linked to the P&L statement, and (3) P&L effects, which depend on the depreciation method and are spread across the depreciation period.

The last contextual issue that needs to be considered in this measurement and reporting context is ◈ **Sub-optimal coordination of reporting and incentive structures**. As the framework agreement example from above showed, supply management's interest to report the entire savings scope cannot always be aligned with financial reporting standards. Thus, there should be a **two-fold reporting system**: supply management versus stakeholder-oriented. Finance and internal customers are interested in budget-related reporting – supply management's corporate value contribution during one business year. Thus, the developed budget effects-measurement approach is of high value for this target group. Reporting deadlines have to be implemented on a monthly, quarterly, or semi-annual basis, depending on the corporate culture, to manage proactively rather than being confronted with sub-optimal economic situations at the end of the business year. At SmoCo, these are called Quarterly Performance Reviews. Thereby it is important to have full transparency about the individual status of the realisation of the planned savings initiatives and the necessity and performance of on-top initiatives. BeautyCo constantly reports: What is in the pipeline? Who is responsible for it? Which degree of realisation is reached? Which category shows best progress? Are the annual targets achieved? These questions need to be outlined to the stakeholders within these reports, to obtain full recognition of the end-of-year results. Supply management as well is interested in proving its business year-related added value, however, also in the long-term effects of its achievements – not just the savings for the first contract year but over the entire duration. It needs a reporting solution that shows multiple-year savings for internal incentive purposes to foster long-term oriented behaviour, not just focus on quick wins. This leads to the conclusion that supply management's incentive system may not only be based on these

financial figures but also embedded within a holistic supply performance management system, consisting of different relevant KPIs.

Design Rule 5 – Measurement & Reporting:
If there is a lack of trust in the reported measurement results on the side of supply management's stakeholders, due to ambiguous savings definitions and processing, to elicit stakeholders' savings approval by providing transparency of the applied measurement practices and access to the comprehensible and unequivocal reporting guidelines,

I[1] Aim at a joint understanding, of savings and their scope, by discussing and defining it within a cross-functional setting for corporate approval and communicating it corporately within a detailed measurement handbook;

I[2] Take a process cost perspective and do not only focus on price reductions as approved savings, since supply management's scope of contribution and responsibility comprises the price, as well as the process and in certain cases even the demand lever;

I[3] Define the expected price and costs as a fixed measurement baseline, which guarantees a consistent measurement starting point but also the consideration of the full range of supply management's savings potential, including avoided and budget included savings;

I[4] Clearly prioritise the reference points for the baseline price especially for non-recurring spend, since no previous price is given. Start with the market index as the most solid one, and also if no reference unit is available, use the best quotation as reference point, which was determined within the sourcing team setting;

I[5] Distinguish between planned and on-top budget effects rather than cost savings and avoidance, as this borderline is too intangible for solid measurement results;

I[6] Compare like with like! Thus, adjust planning assumptions regarding quantity and specification at the end of the year and offset the effects of the ex ante defined contingency factors when measuring the total amount of budget effects;

I[7] Establish a clear business year reference, by always reporting supply management's budget effects based on the invoiced order volume;

I[8] Report budget effects in the context of framework agreements only for the first year;

I[9] Distinguish between cash-flow, budget, and P&L savings in the case of CAPEX sourcing;

I[10] Establish a finance- as well as supply management-oriented reporting system that presents supply management's achievements in the annual budget context as well as from the long-term perspective over multiple years for incentive purposes.

4.3.3 Process-Design Implications of the Case Study Research - The Final Draft of an Integrated Budget Effects Measurement Process

Having formulated five detailed design rules about how to develop and structure an integrated budget effects measurement process, the final overall process could be designed, which takes all obtained insight into consideration (Figure 61).

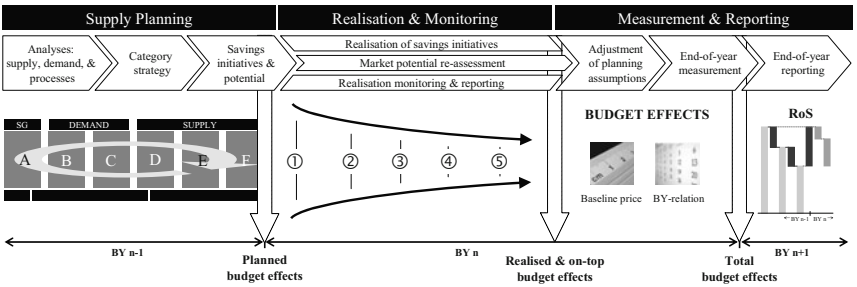


Figure 61: Final draft of an integrated RoS measurement approach.

The entire measurement process is threefold: supply planning, realisation & monitoring, and measurement & reporting, based upon Design Rules 2, 4, and 5. The application of the described measurement prerequisites as well as cross-functional integration in sourcing teams is preconditioned within the single steps following Design Rules 1 and 3. In BY n-1, supply management contributes its market analyses results to the overall analyses based on the supply-, demand-, and process-pillar within a sourcing team setting. After having developed category strategies, based on the analyses results, they are operationalised through savings initiatives and the corresponding savings potential. Budgets are adjusted and cut, and planned budget effects retained. The savings potential represents supply management's strategic plan on a category level, which has to be realised in BY n along a fixed, multi-step realisation approach. However, since market environment changes and the effects of the planned initiatives might be limited, the market potential has to be re-assessed constantly. Realisation monitoring and the rolling reporting of interim results build the basis for transparency during this implementation period. At the end of BY n, planning assumptions need to be revised to report supply management's budget effects under consistent conditions: invoiced order volume. The measured total budget effects, in combination with supply management's organisational cost and managed spend, are reported individually and as RoS at the beginning of BY n+1. The design of this process is based upon intensive discussions with representatives from supply management, operations finance, and the internal customer from the different case companies. It was jointly agreed that this budget effects approach is feasible and covers aspects that are all relevant for practitioners in the current market and corporate setting.

However, *"there is always the human factor"*, as HealthCo's supply manager remarked. This human factor had already become obvious when considering the different degrees of engagement from the operations finance side in this savings issue. At BevCo, operations finance wanted to be fully involved and considered as a bridge for purchasing to the internal customer: *"For us from the finance perspective, it is all about tracking and understanding what their [purchasing's] savings are and delivering on them, no matter what kind of savings they are."* At SmoCo in contrast, the operations financer said: *"As finance we are interested in the sense that they [purchasing] provide benefits to the business. But regarding governance and strict definitions and calculations, no – we just focus on P&L savings."* Whereas at BeautyCo, the CFO initially expressed more doubts concerning the ambition to measure supply management's bottom line effective savings, rather than showing active support: *"In our case at least for the CFO, for the board, for controlling it's a paradigm shift to really consider this."*

This small extract shows that there are more factors to be considered for a successful implementation of a budget effects measurement concept than just the process design. Neely and Bourne (2000, pp. 5-6) found that besides poor system design – which can be neglected after this practice-oriented research – difficulties of implementation are the main reason for implementation failures. The reasons are either of a political or infrastructural nature or due to lack of focus. Kollberg, Elg, and Lindmark (2005) discovered that implementation enablers are mostly of an organisational nature, such as business support and the intrinsic motivation to change. Mettänen (2005, p. 184) mentioned that procedures, facilities, and people determine sustainable system implementation. Human and organisational factors apparently play a major role in the success and failure of performance management systems in general. Franco and Bourne (2003, p. 703) identified factors which seemed to have a great impact on the way organisations manage through measures. More than 50% of these factors were people or organisationally driven.

However, several authors have mentioned that extensive research concerning the implementation of performance management systems has not been conducted (Bititci, Cavalieri, & von Cieminski, 2005; Bourne et al., 2002; Turner, Bititci, & Nudurupati, 2005). In addition, it has become obvious that a measurement process, which involves people and organisational change and claims to be sustainable best practice, also needs to consider 'soft' measurement factors. Thus, to complete the holistic design of a budget effects measurement process, human and organisational factors that are essential for the implementation of this measurement approach, are discussed in the form of an excursion within the following final chapter – elaborating on the last Design Rule: Corporate Commitment.

4.4 Interim Result: Five Design Rules as a Guideline for the Configuration and Functional Set-Up of the Budget Effects Measurement Process

As a result of the multi-methodological case study research, consisting of a longitudinal single case study, four focus group workshops, and two parallel single case studies, five design rules were elaborated. These are based on current contextual issues, which pose challenges to solid savings measurement in corporate settings as observed within the case companies. Thus, the design rules can be regarded as a guideline for the configuration and functional set-up of the developed best-practice process for measuring supply management's budget effects, which takes current measurement deficiencies into account.

Design Rule 1: Measurement Prerequisites

The issuance of a clearly formulated and continuously revised **measurement handbook**, which covers all relevant measurement issues and is accessible to all involved parties, was considered to be the first step towards solid measurement, especially since finance claims transparency for supply management's measurement practices.

Supply managers themselves often did not have a complete overview of their category and were not aware of their relevant internal customers. Thus, a **category layout** including the supplier landscape was advised as another preliminary task.

However, the lack of common language and different planning granularities represented one of the major measurement obstacles. Hence, as a third important measurement prerequisite, the set-up of a **translation matrix** on a category level, connecting supply management's, finance's, and internal customer's points of view, is advised.

Design Rule 2: Supply Planning

Planning, as the starting point for measurement, needs to be based on solid purchasing expertise. However, this was frequently sub-optimal in practice. Therefore, thorough **category cost management** was considered to be basic for a supply manager, as well as a standard set of potential savings initiatives, to have the entire array of savings potential constantly visualised.

Cross-functional sourcing teams, with the internal customer and finance, and supply management as coordinator and in the role of the cost challenger, should be installed not only for the planning phase but also as an institutionalised unit. With those teams, broad knowledge exchange is achieved, comprehensive efficiency gains accomplished, and principal-agent problems mitigated.

Effective supply planning has to be based on detailed **market research**, which is built upon six pillars: corporate strategy, product specification, volume/quantity, technology and innovation, supplier base, and price development. Supply management has to emerge and be perceived as the supply market and cost expert and on this basis develop category strategies, operationalised through concrete savings initiatives and savings potential.

Design Rule 3: Corporate Planning Integration

The internal customer, and even finance, often opposed supply management's budgeting integration due to different reasons. Thus, top-down establishment of **cross-functional sourcing teams** and open **measurement guidelines** were considered as initial steps towards integration.

A single-best solution for 'how to integrate supply management' was not designable, since it would depend on the corporate culture and budgeting process. However, integration is theoretically achievable for bottom-up as well as strict top-down budgeting approaches, as long as supply management appears **ambitious**, is **knowledgeable** about its savings potential, and has outlined a precise **process chart**, with a timeline and roles and responsibilities for each budgeting partner. Practically, however, integration depends on the willingness of and support by the budgeting partners.

Design Rule 4: Realisation & Monitoring

Ambiguous savings tracking was observed as a major realisation issue, since companies planned strategies, but often did not implement them systematically and track their effect. Thus, the **Degrees of Realisation** concept is presented as implementation logic. It divides the initiative realisation process in five steps – from the initial idea to the final conversion.

A **tracking system** has to be in place that monitors the status of each initiative and enables the supply manager to have full transparency of his category management and to induce counter-measures or on-top initiatives if required.

Another relevant realisation issue was savings reinvestment during the year. As long as budgets are unofficially shifted or spent on unplanned material, no budget effect can be identified. Hence, supply management needs to enforce a so-called **'pot' system**. On-top savings are frozen on this special account, which provides new funds only after official application and approval. As a consequence, budget movements become transparent and the savings-budget link achievable.

Design Rule 5: Measurement & Reporting

As an initial step, a **joint understanding of savings**, which is corporately approved, has to be determined and communicated. Thereby, supply management's scope of competence should be laid upon price as well as process cost reductions.

To report reliable measurement results, a **fixed measurement baseline** has to be defined; and to report comprehensive measurement results, this baseline should be the expected price – the so-called baseline price. To obtain solid baselines, pre-defined and **prioritised reference points** have to be applied for recurring and non-recurring spend separately. In this context, the equivocal differentiation between cost savings versus avoidance is replaced by the **planned versus on-top budget effects**.

However, to obtain real budget effects in terms of period relation, they must always be based on the **invoiced order volume**, which becomes an issue of adjustment at the end-of-year measurement. Therefore, to mitigate the problem of sub-optimal incentive structures, if supply management achievements are accounted for one business year only – a **two-fold reporting system** has to be designed: Supply management versus stakeholder oriented.

If a supply manager implements these interventions, theoretically he would be able to measure supply management's budget effects in a solid and reliable way. However, there is the human factor to be considered, which will be highlighted in the following chapter.

5 Process Implementation Design: Implementing Supply Management's Return on Spend

Measuring supply management's budget effects has been treated as technical innovation so far, which requires a clearly defined process. However, the issue of commitment and motivation has been consistently present. Apparently, there was more to successful measurement than just a mechanical process design. "A cost management system […] is not a technical innovation […]. This distinction between administrative and technical innovation is important because the adoption, decision, and implementation success […] are determined more by particular behavioral [!] and organizational [!] variables. […] Thus, […] the key to successfully implementing ABC is effectively dealing with specific behavioral and organizational variables" (Shields, 1995, p. 149). "ABC is a socio-technical tool, and the emphasis should be on the social dimensions" (Cokins, 1998, p. 75). These quotations from literature support the statement: social and behavioural factors play a critical role in success. The literature referred to activity-based costing (ABC), which functioned as a basis for the design of the budget effects measurement process. Since this designed process is innovative and not presented and discussed in established literature, the following discussions on implementation issues will be primarily based on leading ABC- and ABB-literature.

To round off the issue of measuring supply management's budget effects, discuss it holistically, and make its implementation feasible in practice, this chapter is dedicated to the development of the final Design Rule: 'Corporate Commitment'. In 5.1, the requirements for the establishment and performance of this measurement process are presented and discussed. Realising that there is a current gap between the ideal and current fulfilment of these requirements in practice, the gap-causing factors – the inhibitors, which were discussed in the focus group setting – are analysed in 5.2 also by means of literature. Based on the insights from the requirements and the inhibitors, enablers are highlighted in 5.3, which eventually leads to the formulation of the final Design Rule, covering the design of an appropriate implementation process. Since the issue of a costing system or project implementation represents a – in literature – largely discussed topic, the empirical findings from the collaboration with the practice partners are substantiated – were applicable – with theoretical findings.

5.1 Definition of Measurement Process Requirements

Bastl, Grubic, and Templar (2007, p. 92) base the classification of their implementation factors on Collins and Porras (1996), who discuss how best practice organisations require the right people, processes, and technology. Busco, Giovannoni, and Scapens (2008, p. 108) perceive performance measurement systems as a set of rules, routines, and roles, which are

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capable of carrying meanings and rationale throughout the organisation. Therefore, the definition of the requirements of the budget effects measurement process is based upon three corresponding pillars (Figure 62): process for routines, behaviour for people and roles, and data instead of technology or rules. Since overlaps between the three pillars regarding the requirements were noticeable, the explanation will be three-fold: in 5.1.1, the one-dimensional requirements within each stand-alone pillar are presented individually; in 5.1.2, the two-dimensional requirements are reasoned; and in 5.1.3, the three-dimensional requirement, which covers data, process, and behaviour, is considered.

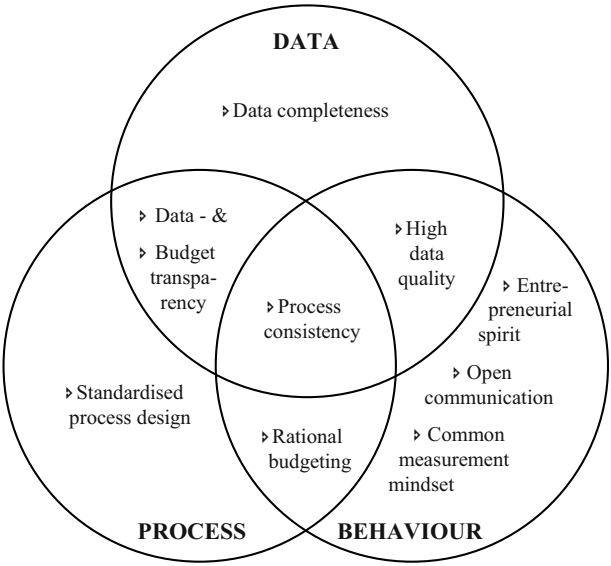

Figure 62: Requirements for measuring supply management's budget effects.

5.1.1 One-Dimensional Requirements: Data or Process or Behaviour

Data Dimension

"Accurate cost data will be important not only to understand what is profitable today but also how to drive future profits and new strategies" (Cokins, 2001, p. 26). Management needs data to take such decisions and steer the business (Brewer, 1998, p. 243). Therefore, data function as one of the main management prerequisites, because they quantify business reality, and reality in terms of performance measurement is expressed through the comparison of data – no data, no measurement. Data hence form the elementary basis for measuring supply management's budget effects.

- **Data Completeness:** Supply management must identify all types of costs that are relevant for measuring budget effects. This does not only apply to cost categories. Overall, process cost transparency is required. Particularly for budget comparisons, three different types of period-related data – in the form of price and quantity indications – have to be accessible: expected budget data, which represent the baseline and do not yet include supply management's savings initiatives; official budget data at the beginning of the business year, which include planned savings potential and hence represent the target state and official levelling rule; and actual data at the end of the business year, which show the realised volumes. All three types of period-related data are necessary to measure supply management's entire range of budget effects and to make a clear distinction between supply management-, market-, or externally driven budget factors. To eventually measure the Return on Spend as a whole, also the information on the managed spend – excluding maverick buying – and the organisational costs of the supply management or even sourcing team – depending on the organisation structure – have to be transparent. As a final step, all data need to be collected and made readily available in an applicable format for their daily and flexible use, as Ellram and Siferd (1993, p. 172) advised.

Process Dimension

In order to establish the designed measurement process – regardless if as start-up or change process – it is not enough just to tell people what to do and to explain the future process setting without providing guidance. Also Waeytens and Bruggeman (1994, p. 46) stated that formal procedures and control mechanisms are required for sustainable implementation.

- **Standardised Process Design:** The measurement procedure needs to be clearly drafted and explained in detail, containing the process design, milestones, deadlines, roles, and responsibilities. This draft has to be institutionalised in form of a process guide, accessible for all involved parties. It has to be considered as the standard process – the role model – with which each player has to comply. *"Try to make things lean, get the right information the first time so that you do not have to go back and ask for more information each month"*, as HealthCo characterised its ideal standard measurement process.

Behaviour Dimension

Attitude, commitment, and culture – different names for one aspect: behaviour – are one of the most important and critical success factors of performance measurement implementation (Bititci et al., 2006, p. 1326). Sustainable implementation always involves change. Change requires established systems – consisting of one or several individuals – to move and re-establish their balance. This is a critical procedure, often characterised by resistance (Argyris & Kaplan, 1994; Shields, 1995; Swenson & Barney, 2001). Behaviour hence demands a high

degree of attention within the discussion of how to effectively measure supply management's budget effects, because it can happen that people simply do not want to comply.

- **Entrepreneurial Spirit:** Gupta and Gunasekaran (2005, p. 340) claim a more proactive performance measurement approach and recognise that management accounting, which is responsible for delivering reliable information for solid decision-making, needs to undergo a significant change in mindset towards a management-oriented and -skilled function. Management accounting has to become entrepreneurial, especially in the context of innovative costing systems (Dekker & Van Goor, 2000, p. 44; Shank, 1989, p. 54). Zsidisin et al. (2003, p. 147) claim entrepreneurial spirit also from supply management: "PSM is the most logical function to take a leadership role in the activities of TCO", and hence has to adopt the total cost understanding including process costs (Ellram, 1995, p. 7). Supply managers' scope of accountability has to be clearly defined. Therefore, HealthCo drafted the procurement process steps with the different tasks along procurement's influence curve, and indicated where to generate which cost efficiency. *"Within our corporate efficiency programme, every function wants to become the efficiency champion"*, as HealthCo's purchaser explained. Supply management has to identify efficiency gaps proactively, align its strategies with business' needs, and enforce cross-functional collaboration, as the connector of manufacturing and sales like management accounting, regarding BevCo. Within this cross-functional setting, it is necessary that the activities of supply management, business, and management accounting are aligned with corporate goals and that each function is aware that it needs to act like a small business on its own, with the entrepreneurial mindset, to strengthen the corporate position as overall objective – or in SmoCo's words: *"Ambitious purchasing department? I think it's more that all the partners should be ambitious."*
- **Open Communication:** The ambition and common goal orientation need to be channelled through open communication within the cross-functional teams. The communication channels and processes need to be institutionalised, systematic, and routine. Brewer (1998, p. 256) and Chanegrih (2008, p. 283) explain that collectivist settings can positively affect the success of the costing system. However, the information exchange has to be open and unbiased for solid planning results. *"You could play games with it, but it doesn't do anybody a favour. There are dangers in it and it requires grown-up conversations with business"*, as BevCo's head of purchasing expressed the risk of being political. Information sharing is a precondition to improve the overall corporate performance (Ellram & Siferd, 1993, p. 181; Kemppainen & Vepsäläinen, 2003, p. 716; Zsidisin et al., 2003, p. 143). Institutionalised feedback loops play an incremental role in this context to reflect continuously on data validity as well as the relationship status. *"Define the savings as a team and identify a way to track them as a team"*, as HealthCo's purchaser concluded.

- **Common Measurement Mindset:** To act as a team, common direction, culture, and objectives have to be defined, which are supported by top management and employees and create shared beliefs and values (Gordon & DiTomaso, 1992, p. 784; Shields & Young, 1989, p. 18), to overcome the risk of principal-agent behaviour resulting from diverging interests. SmoCo regarded a corporate cost awareness culture as one major component: *"It is not your money, it's the money of the business, spend it wisely, and have a rationale on what you are spending the money for"*. The supply manager, thereby, acts as cost challenger, as supported by HealthCo. To implement an activity-based management approach successfully, a common measurement mindset needs to target the joint pursuance of the process cost and TCO-perspective (Baird, Harrison, & Reeve, 2004, p. 394; Ferrin & Plank, 2002, p. 19). Each involved function has to endorse the disclosure of savings opportunities and eventually accept budget cuts as a consequence – not as punishment, but as corporate value contribution. Budgeting may not be considered as a necessary evil, but as a tool to detect corporate opportunities and risks. BevCo has experienced that as soon as joint measurement objectives and incentives were installed, *"we're helping each other to deliver the common objectives"*. *"We share the success. It's not that procurement achieves that – it's procurement and the stakeholders altogether"*, as SmoCo assented – or to put it in Cokins' (2001, p. 26) words: "One team… one mission".

5.1.2 Two-Dimensional Requirements: Data & Process & Behaviour & Data

Data & Process Dimensions

Data- and budget transparency concern the consistent processing of data and therefore build the intersection of the data and process dimensions.

- **Data Transparency:** Christopher and Gattorna (2005, p. 117) have already claimed that sharing demand and supply issues, creating data transparency, is essential for supply chains. Thus, it can be reasoned that this must first be true for inner-corporate relationships as well. For measurement and reliability reasons, all data must be traceable. The sources and provider of the data as well as the assumptions on which they were based, must be clearly indicated. SmoCo's purchaser considered it as most critical to dispose as supply manager permanently of full supplier- and supply market transparency. *"It is more risk [not to have transparency], but if you wanted to do that, you need to have a small portfolio of suppliers that is freely manageable."* To establish a data collection structure, standard data reporting must be installed, e.g. in form of catalogues, as in SmoCo's case, or category templates, as developed for PhoneCo. It is essential that every budgeting party can reconstruct the budgeted data to accomplish solid measurement results, excluding non-supply management caused effects, such as positive market developments.

- **Budget Transparency:** Since budget effects form the measurement object, which ought to be obtained in an unbiased way, the budgeting process itself also needs to be performed in an open and transparent manner, following the process cost approach. Thus, the final official budget and its single constituents have to be traceable. To obtain this full budget transparency, the budget drivers need to be analysed in parallel with the cost drivers. The budget assumptions as well as the final budget-fixing step need to be supervised by a neutral monitoring function, which enforces cost awareness and the idea of realistic budgets for efficient capital allocation. Thereby, accessible and comprehensible documentation and reporting patterns are always required.

Data & Behaviour Dimensions

- **High Data Quality:** Complete data does not automatically guarantee high quality data and eventually high quality budgets. To obtain meaningful budget effects, the behaviour dimension also has to be taken into consideration, which involves two further aspects: first, the scope of relevant data has to be defined to make sure of covering the complete array of necessary information for the budgets. Second, the data have to be delivered by pre-defined, knowledgeable experts from supply management, finance, and business to create the basis for planning and measuring upon well-founded information. Thereby, open and unbiased communication patterns are pre-conditioned.

Process & Behaviour Dimensions

- **Rational Budgeting:** The type of budgeting process needed to measure budget effects following the designed approach, can be specified differently: bottom-up, democratic, hybrid, etc. Calling it rational indicates that the budgeting process needs to follow a certain rationale, being traceable and not arbitrary. *"If you have three equal partners – internal stakeholder, finance, and procurement – they have the freedom to raise their voice and put the things on the table and then the plan is drawn from that. […] It's more […] the same share of voice"*, as demanded by SmoCo's purchaser. Since it involves the interaction between the partners and the process itself, it is an intersection of process and behaviour. In HealthCo's case, there is a top-down trigger: *"In order to participate in the planning process, finance needs to call supply management to search for savings potential"*. However, they also state that supply management needs to identify and communicate its savings potential proactively and bottom-up to avoid the reactive task of dealing with top-down budget cuts. Only by means of a bottom-up or at least counter current process, in which budgets are built upon substantiated costs and quantity assumptions, does it become possible to set realistic and meaningful budgets, whose data input is comprehensible for all affected parties.

5.1.3 Three-Dimensional Requirement: Data, Process, & Behaviour

- **Process Consistency:** This aspect affects all three pillars, as supported by Cokins (2001, p. 31): "It is much easier for organizations [!] to transform themselves when their information links and communicates their strategies to the behavior [!] of their employees." HealthCo's purchaser answered the question regarding the necessity of measurement system and process alignment, the following way: *"I think from a transparency point of view it is very useful. Then you need to balance between extra work in the form of bureaucracy and transparency. The reason why we started is – it works without today – but it is unreliable. There is the human factor, the error factor and the interpretation as well."* Therefore, consistency through all three pillars is the major prerequisite for this measurement approach: type and quality of data need to be defined, recorded, and tracked consistently, following the process cost perspective; planning processes need to be harmonised for integration; and cross-functional interfaces have to be characterised by cost conscious behaviour and common language. Since the success of the designed budget effects measurement process does not only consist of plain data comparison, but also depends on the process and behaviour dimension, all three need to be well-aligned and geared towards one aim: the solid and precise measurement of supply management's budget effects. Thus, systems, tools, and processes, which support the instalment of a 'common theme of measurement', have to be established.

These requirements need to be fulfilled in order to be able to perform the designed measurement process successfully. They were derived from discussions with corporate partners, personal observation within the long-term case study, and backed up with theoretical findings. Their relevance and validity has been justified. However, their actual fulfilment in practice has not been addressed yet. The eventuality has to be explored that the realisation of measuring supply management's budget effects does not fail because of the process design, but the corporate set-up. Therefore, the reflection on the status quo of these requirements is the main subject in the remaining chapters of this thesis.

5.2 Identification and Discussion of Measurement Process Inhibitors

The investigation of the existence and effects of factors that inhibit the designed measurement process with its implementation is the focus of this chapter. It is the aim to provide insight into the corporate measurement background and identify further critical success factors – not only of a procedural, but a corporate nature. The focus group setting was hence altered in order to widen the potential insight in implementation issues. The effects of this change and the conducting of a questionnaire within the workshop setting is the subject of 5.2.1 – a brief methodological excursus. With the aim of learning about the requirement status, the requirement gaps are presented and interpreted in 5.2.2 as the outcome of the workshop

questionnaire. These gaps build the basis for 5.2.3, in which the gap-causing inhibiting factors – elaborated in cooperation with practitioners – are presented and their effects explained.

5.2.1 Identification of Requirement Gaps – A Methodological Excursus

Since it has been realised – especially in the course of the longitudinal case study – that the corporate setting and peoples' mindsets are major critical success factors of the entire measurement approach, one entire focus group workshop was dedicated to the discussion and analysis of implementation factors. At this time, the major part of the two parallel case studies was already accomplished. During the case interviews, it became apparent that those two case companies also struggled with inhibiting factors. Thus, it was decided to slightly deviate from the fixed workshop setting and also to invite SmoCo and BevCo to this particular focus group workshop on implementation issues. Therefore, the third focus group workshop consisted of BeautyCo, BevCo, HealthCo, and SmoCo as corporate participants.

In this setting, the above requirements were presented. After having discussed and unanimously agreed on them, the participants were asked to complete a small questionnaire (Appendix K). Each company received one questionnaire. If more than one representative per company was participating in the workshop, they had to complete the questionnaire jointly. This was the case for BeautyCo and SmoCo, which were represented by one purchasing and one operations finance professional. This circumstance – two different functional perspectives – was supportive to reduce the personal bias. The practitioners had to indicate on a five-point scale how they perceived the degree of occurrence of the single measurement requirement within their corporate setting. To reduce the room for personal interpretation and make the answers comparable, the requirements had been operationalised prior to the workshop. This questionnaire functioned as a workshop tool and was used for illustration reasons for further discussions, rather than as a scientific method. The objective was to obtain a first idea about the status of the requirements rather than a statistically valid and generalisable answer, which would not have been possible with a sample of four companies.

After having presented the so-called requirement gaps to the participants, two practitioner sub-groups were formed, in which the causes for those gaps were discussed and so-called inhibiting factors identified and documented. The results of the group work were presented and discussed in plenary and built the basis for the inhibitor analysis in 5.2.3.

5.2.2 Requirement-Gap-Analysis – Requirements Versus Status Quo

Figure 63 illustrates the current requirement gaps for the four focus group companies. The columns, thereby, indicate the size of the gap: the higher the value, the bigger the gap between the current degree and the target degree of the particular requirement occurrence, which always equals five. Regarding the contextual setting, it has to be borne in mind that all

considered responding companies coincide with the FMCG industry characteristics, and that a corporate efficiency movement drives all companies, except BeautyCo.

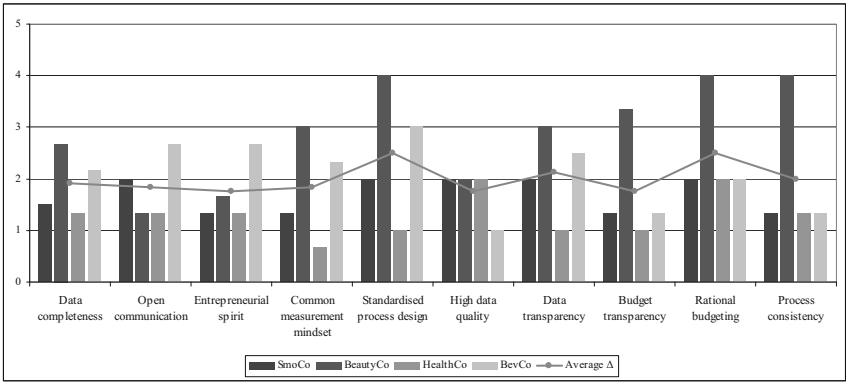

Figure 63: Requirement gaps for the four participating focus group companies.

None of the companies indicated a complete requirement fulfilment in the form of a zero-gap. This means that ideal corporate conditions for implementing the budget effects measurement approach are not yet provided in any of the four companies. For most of the requirements, however, the average is below two, which leads to the conclusion that at least the focus group companies in general dispose of the required conditions to implement the measurement process. However, there is still work to do. It becomes apparent that HealthCo, which considered itself as quite advanced in savings measurement issues and presented solutions rather than questions in the course of the focus group, shows the least gaps across all requirements after having been confronted with this topic for several years. Especially concerning the common measurement mindset, it outperforms the other companies by far. At BeautyCo, in contrast, which has just initiated the introduction of the performance management culture, most room for improvement appears. BevCo's situation as well – being in the midst of its purchasing restructuring programme – made remarkable gaps visible. This leads to the assumption that successful implementation largely correlates with time and examination. It indicates that the process of measuring savings or budget effects in a significant manner – independent of the corporate efficiency drive – will take more than just the procedural implementation phase. It will last several periods, characterised by critical reflection, until both the mindset and corporate support are established and incorporated.

The heterogeneous value structure of the four companies with regard to one requirement is another remarkable response pattern, which appears for several requirements. For 'process consistency', 'rational budgeting', 'budget transparency', and 'entrepreneurial spirit' three of

the four companies agreed upon a similar, lower gap level. Those three can probably give clear advice to the fourth company about what to do. Since mostly either BeautyCo or BevCo are the outlier, this can be possibly attributed to their measurement maturity. However, the remaining requirements, especially 'common measurement mindset', 'standardised process design', and 'data transparency' show significant fluctuation between the responding companies. Neither the industry, nor the time since when this issue has been confronted, nor the degree of management support can be recognised as the decisive contextual factor. It shows that even for a small selection of companies, active in a similar sector and with the motivation to measure, not one common implementation process or approach can be fixed, since it depends on too many, non-generalisable factors. Company-specific implementation solutions are required. Thus, for the formulation of the last design rule, the high standard cannot be kept to provide detailed advice about which interventions to perform to result in the ideal corporate setting. General advice can be given about which steps to follow to create a good implementation basis. The success of this implementation, however, depends on the corporate-individual embodiment.

5.2.3 Discussion of Inhibitors – Data, Process, & Behaviour

Which factors cause these requirement gaps? Following this question, the workshop participants devised a list of 30 inhibitors, which the author complemented with nine additional factors experienced in the course of the longitudinal case study (Table 10). These inhibitors represent the extension of the already elaborated corporate contextual issues and were hence aligned with them. Allocation of the single inhibitors across the three pillars – data, process, and behaviour – is pictured in Figure 64.

Having conducted literature research in parallel, it was noticed that some of the inhibitors, identified by the focus group participants from scratch, were not specific to the designed budget effects measurement process. They were already discussed in literature in the context of corporate ABC- and TCO-establishment. Nevertheless, several inhibitors appeared to be specific to the designed measurement process, since not explicitly mentioned before. Those were marked grey in Table 10.

#	INHIBITORS	METHOD	CATEGORY		
			Data	Process	Behaviour
1	Data overload	FG	x		x
2	Different corporate best practices	FG	x	x	x
3	Functional silo-mindset	LC	x	x	x
4	Guidelines with room for interpretation	FG	x	x	x
5	High implementation costs	FG	x	x	x
6	Inconsistent levels of standards and granularity	FG	x	x	x
7	Inefficient data collection	FG	x		x
8	Information retention	LC	x		x
9	Insufficient data availability	FG	x	x	
10	Lack of adequate systems in place	FG	x	x	x
11	Lack of business need and/or interest	FG			x
12	Lack of clear targets	FG	x	x	x
13	Lack of cost consciousness	FG			x
14	Lack of data transparency	LC	x	x	
15	Lack of high-quality base data	FG	x		x
16	Lack of implementation resources	LC			x
17	Lack of problem communication and training	LC			x
18	Lack of process (cost) perspective	LC	x		x
19	Lack of process embedding in daily routine	FG	x	x	
20	Lack of process owner	FG		x	x
21	Lack of purchasing's accountability	FG	x	x	x
22	Lack of human resources	FG		x	
23	Lack of time for purchasing strategic activities	FG	x	x	x
24	Lack of top-level support	FG	x	x	x
25	Mechanistic budgeting approach	FG		x	x
26	Mismatched internal incentive system	LC			x
27	Missing language alignment	FG	x		x
28	No interest in change	LC			x
29	No local spend management involvement	FG		x	x
30	No perceived value add of budgeting	FG	x	x	x
31	Operating view on purchasing – corporate perception	FG			x
32	Purchasing with reactive and operating role perception	FG			x
33	Purchasing's too late planning involvement	FG	x		x
34	Skill-set variability	FG		x	x
35	Strict top-down budgeting	FG		x	x
36	Top-down implementation forces	LC			x
37	Unaligned cross-functional incentives	FG			x
38	Unaligned cross-functional objectives	FG			x
39	Unclear responsibilities across functions	FG	x	x	x

Table 10: List of budget effects measurement inhibitors.

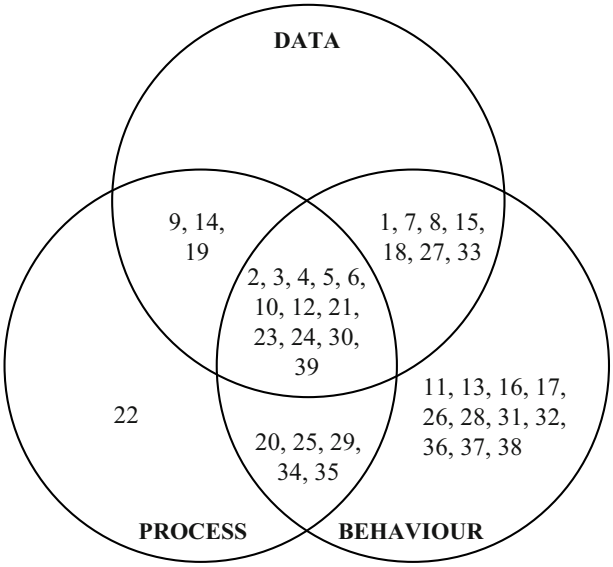

Figure 64: Classification of the different inhibitors – Data, Process, & Behaviour.

- **Data:** It is interesting to note that there is no purely data-impacting inhibitor. If one inhibitor can be connected to data issues, it involves at least procedural or behavioural aspects as well.
- **Process:** The only identified process-related inhibitor is **'lack of human resources'**. *"We have four persons on regional controlling and they have to work each with 20-30 companies and lead the discussions on budget and deviations. I would think this is quite a challenge."* As expressed by BeautyCo, the process of such a rather demanding measurement approach can hardly be accomplished satisfactorily without an adequate amount of finance as well as supply management people. This was also mentioned by Zsidisin et al. (2003, p. 146) and Ellram (1994, p. 175) in the context of the performance of demanding costing systems, such as TCO.
- **Data & Process:** The practitioners mentioned that often requirements are missing to create budget transparency. This problem can be related to the known issue that necessary costing data are often not readily available (Ellram, 1995, p. 7) – **'insufficient data availability'**. Another inhibitor is the **'lack of data transparency'** that was observed within PhoneCo, where certain costs were overlooked, as also described by Ellram and Siferd (1993, p. 175), or their origin and formation were retrospectively unclear especially for indirect spend. This "poor visibility" (Cokins, 1998, p. 72) posed a major challenge to solid measurement. **'Lack of process embedding in daily routine'** has not been mentioned in literature as a relevant

inhibitor. However, referring to the rational and detailed budgeting process, which is aimed for, SmoCo's purchaser commented that *"it's a painful task that is happening at different times during the year, that people do not understand what is behind, in order to say: here is a value that I get out of that"*. Thus, it turns out to be one of the newly identified inhibiting factors.

- **Behaviour:** This pillar seems to be most critical for the designed process realisation, in terms of the amount of inhibitors. The **'lack of cost consciousness'** and **'lack of business need and/or interest'** were considered to be interrelated by the practitioners. As BeautyCo stated: *"Procurement and budget holders need to work on optimising cost without sacrificing quality. This, however, is also linked to what is the message, top management is sending out to the organisation, in terms of priorities and overall targets. […] To what extent is top management leveraging procurement knowledge to optimise costs and manage the bottom line?"* If management does not attribute a high priority to the measurement issue, an efficient and effective implementation is hard to accomplish, as also discussed in the respective literature (Anderson & Young, 1999, p. 528; Lin, Collins, & Su, 2001, p. 711; Norek & Pohlen, 2001, p. 49; Waeytens & Bruggeman, 1994, p. 47).

  The following implications were observed at PhoneCo, while trying to implement the measurement process: the **'lack of problem communication and training'** to inform people comprehensively about the goals and content of change and to prepare them, in combination with the resulting **'no interest in change'** – neither within finance, nor business and not even operating purchasing due to the **'top-down implementation forces'** without considering people's needs – led to the '**lack of implementation resources'** referring to people, skills, time, money, and technology. If top-level supply management is out on a limb with its progressive ideas on measuring its budget effects and the operational basis does not take a lead, sustainable implementation is not achievable (Cokins, 2001, p. 30; Krumwiede, 1998, p. 265; La Londe, 2003, p. 8; Thomson & Gurowka, 2005, p. 33; Zsidisin et al., 2003, p. 143).

  Three root-causes were identified, which could possibly lead to this corporate resistance and hence also function as inhibitors: if supply management is eager to prove its entire scope of savings, including the planned ones, but is only rewarded for on-top budget effects as a result of the **'mismatched internal incentive system'**, there is no reason for the supply management basis to support this complex and new planning approach. Managers, regardless of their hierarchical level, are more likely to pursue common objectives, if the incentive system is aligned (Anderson & Young, 1999, p. 555; Bourne et al., 2002, p. 1289; Coates, Davis, & Stacey, 1995, p. 128).

The focus group practitioners – HealthCo and SmoCo in the following quotation – extensively discussed the matter of **'unaligned cross-functional incentives'**, and **'objectives'**. *"The marketing and sales guys will be measured by the sales that they generate; sourcing is measured by the savings, what is in it for me as marketing guy to have the sourcing guys there? – I think it's more for less. – Exactly, but that's something that not everybody understands."* Budget owners do not have savings targets and are hence not motivated to foster savings transparency. At the same time, they fear that quality – as their major objective – is jeopardised through a focused savings approach. This issue was also found by Armstrong (2002, p. 99) and Hergert and Morris (1989, p. 185).

'Purchasing with reactive and operating role perception' and **'operating view on purchasing – corporate perception'** were found as 'new' inhibitors. *"Especially in procurement [at HealthCo] now, if they see an opportunity, they will do it, they are full of good ideas; but if you're not proactive, if you don't raise your voice, you won't be partners again."* If purchasing is perceived as operating and reactive by other corporate functions, it appears as if it did not understand business concerns and hence add any value to the budgeting process. According to BevCo: *"If an internal customer wants to exclude you, they will do the budget internally themselves […]. Because you are not involved in the conversations, you're not in a position to challenge any of what they've done, […] you don't know enough to say that is right or that is wrong."*

This discussion shows again that supply management needs to be ambitious and intrinsically motivated in the first place, before internal customers and operations finance will be willing to accept it as equal business partner.

- **Data & Behaviour:** At PhoneCo, due to the **'lack of (process) cost perspective'**, process cost data was not readily available and hence not shown on supply management's radar as potential for efficiency gains. **'Data overload'** was often put forward as a reason for this circumstance. These massive amounts of detailed information that cannot be processed any more, have already been discussed by Cokins (2001, p. 31) and Stapleton, Pati, Beach, and Julmanichoti (2004, p. 584). Why consider process data, if there is already too much information available? *"We have so many data today with different systems that we don't know how to filter and say here is just a basic set that I want to see and I want this to be qualitative."* SmoCo hence added another issue: **'lack of high-quality base data'**, as also supported by La Londe (2003, p. 7). It is not possible to achieve unbiased and open communication if the data as the basis are not accurate and reliable. *"**'Inefficient data collection'** [occurs], if you don't get the data that you really need to proceed to the next stage"*, HealthCo put emphasis on this inhibiting factor, which could not be found as such in literature.

As another data-behavioural inhibitor, **'missing language alignment'** was mentioned. *"Finance coding, procurement coding and sometimes the lack of different systems, different codes – and if you want to see the global view you can't do it"*, as in HealthCo's case. Therefore, **'purchasing's too late planning involvement'** emerged as a follow-up inhibitor, which is also discussed by Zsidisin et al. (2003, p. 145).

One final inhibitor, which was observed at PhoneCo, was **'information retention'**. Since purchasing, internal customers, and finance have not yet established mutual trust, purchasers sometimes questioned the reason for providing the others with their information and knowledge. This phenomenon has only been discussed in literature so far, in the context of inter-corporate, but not inner-corporate relationships (Bastl et al., 2007, p. 93; Moorman, Zaltman, & Deshpande, 1992, p. 322).

- **Process & Behaviour:** For this intersection, no directly related discussion was found in the respective literature. **'Strict top-down budgeting'** addresses the matter of applying budgeting rationale. If budgets are determined single-handedly by finance and considered as a non-questionable institution, the need for integration can hardly be conveyed. The same happens, if management accounting has not undergone a change of mindset, as already claimed by Gupta and Gunasekaran (2005, p. 339). SmoCo expressed it this way: *"They just think: ok…it's just a tick in the box exercise."* It is an inhibitor, if management accounting does not apply management skills, but considers **'budgeting as a mechanistic approach'**, rather than as an auxiliary process for management decisions.

  The **'lack of process owner'** is another inhibitor. If there is no liable instance that designs, introduces, implements, advances and adapts the measurement process – takes the lead – the lack of authority inhibits a structured and sustainable process realisation. This instance would also be responsible for diminishing the **'skill set variability'**, because in SmoCo's case, *"skill set is not equipped for the standard complexity of today's planning"*, and in order to achieve aligned skill levels, central coordination is required. For big companies, **'no local spend management involvement'** is a critical issue, difficult to overcome. Corporate guidelines can be communicated as mandatory; the compliance of the local entities, however, cannot be monitored due to reasons of complexity and lack of resources.

- **Data, Process, & Behaviour:** Two of the most critical inhibitors are found in this intersection: **'Functional silo-mindset'** and **'lack of top-level support'**. At PhoneCo, especially in the indirect area, purchasing's functionally isolated behaviour was tolerated and not questioned. This phenomenon of the legacy of functional silos was also described by Bastl et al. (2007, p. 93). If this is the case, the idea of measuring budget effects is overruled and abrogated. Such a circumstance can often be traced back to the fact that **budgeting** is considered as a necessary evil and **'not perceived as value adding'**. If, in addition, top

management lacks interest, no top-level support can be expected. However, this is required to enforce the measurement approach on the operating level, with its required tools and processes. *"It [the implementation process] needs to get escalated because if they [the affected parties] want to stick to their own practices, someone has to say 'I'm taking away your toy and giving you a new one'; and top management has to take on the discussion"*, as explained by BeautyCo. The relevance of lacking management support is also seen through its widespread discussion (Anderson & Young, 1999, p. 556; Lin et al., 2001, p. 712; Stapleton et al., 2004, p. 587; Thomson & Gurowka, 2005, p. 33; Wouters, Anderson, & Wynstra, 2005, p. 168).

Based on the general issue of different languages**, 'inconsistent levels of standards and granularity'** and **'guidelines with room for interpretation'** hinder the achievement of full process consistency. The definition of rules and roles is thereby indispensable, because it is always the question: *"What do you bring to the party?"* as SmoCo's purchaser said. Thus, **'lack of clear targets'**, **'lack of purchasing's accountability'**, and **'unclear responsibilities across functions'**, are considered as inhibitors in terms of incentives and extrinsic motivation.

The **'lack of adequate systems in place'** has already been mentioned by Cokins (1998, p. 74) as well as the **'lack of time for purchasing strategic activities'** by Ellram and Siferd (1993, p. 172). *"So it is fully an in-depth expertise of one of the category of expenditure. Where in the past we didn't have time to do that"*, as explained by SmoCo. However, an entirely new inhibitor was **'different corporate best practices'** supported by all focus group companies. *"Differences of so called best practices in other countries. They say that they do this already and that's the only way to do it."* BeautyCo referred with this to another type of corporate resistance: inner-functional competition. *"And also cost and resources connected to introduction or alignment of tools and systems. You pay a price for process consistency."* Concluding the enumeration of inhibitors with the argument of **'high implementation costs'** shows that the proof of supply management's effectiveness eventually depends on its overall efficiency.

It can be summarised that these inhibitors provide a sound initial overview of the major challenges to be expected when trying to implement the budget effects measurement approach, since they emerged from intense discussions between four internationally leading, culturally different large companies, each positioned differently in terms of savings measurement maturity. Therefore, it can be assumed that the scope of possible inhibitors was broadly covered. Thereby, it became obvious that the inhibitors for the designed measurement process largely correspond to common project implementation barriers – so nothing special. Nevertheless, several important supply management- and budgeting-specific issues had not been

discussed in the implementation context before. Especially those require tangibility through the definition of enablers.

5.3 Analysis of Measurement Process Enablers – Management Implications

The enumeration and discussion of measurement process inhibitors has been important in order to sensitise supply managers to the potential obstacles and challenges besides the actual process design. As the final part of this thesis, the exploration of actions, which facilitate the sustainable implementation of the designed budget effects measurement process becomes interesting. This is the focus of this chapter.

The author detected the different enablers in the course of the focus group discussions. They were not a direct part of the agenda but were mentioned in the form of possible approaches to the identified inhibitors. Therefore, this list of enablers will not be exhaustive. It is the objective within this chapter to make supply managers think out of the box about how to achieve their functional goals by initiating certain internal change processes and by taking advantage of corporate movements. First, corporate enablers, which the supply manager does not directly influence, but which contribute tremendously to implementation success, are presented in 5.3.1. Second, supply-management specific enablers, which can be triggered by supply management itself, complement the corporate enablers in 5.3.2. Design Rule 6 'Corporate commitment' is formulated in 5.3.3 as the closing element of this thesis, rounding off the design and implementation of the process for measuring supply management's budget effects.

5.3.1 Corporate Enablers

Corporate enablers are those with a positive and supporting impact on the implementation of the budget effects measurement process. However, they are corporately driven and determined. Top management is the owner; supply management – depending on its corporate reputetion and degree of influence – has no direct influence on their execution.

- **Top Management Support:** HealthCo's purchaser expressed it this way: *"CFO's notion towards this measurement issue is essential for its corporate fall or rise."* Top management is responsible for corporate success. It has to coordinate the resource allocation within the company and determines the priorities in daily corporate life. If top management does not enforce the measurement approach, counteract resistance from the basis, provide political support and motivation, and allocate necessary resources for its realisation, the measurement project will fail (Chanegrih, 2008, p. 284; Shields, 1995, p. 150; Swenson & Barney, 2001, p. 42). Argyris and Kaplan (1994, p. 83) call for an education and sponsorship process to enable change agents to gain senior management's support. This was approved by HealthCo: *"Start by getting a sponsor, [who is] high enough in the company;*

if possible your CEO, for me that's the first lesson you need to do. […] you sign a communication plan, what is exactly what you're going to do and it's what you need this person to do for you." HealthCo's purchaser answered the question about the three key messages which he would send to top management to create a sense of urgency and emergency and to gain the necessary support, with the following: *"The three key messages? Money, money, money! And if you don't get any support, I think you're in the wrong function."* All focus group companies agreed that it is not only about a process. It is about embedding the culture of cost consciousness in the company; it is about cultural change and hence only top-level support enables its sustainable realisation.

- **Corporate Productivity Programmes:** Corporate productivity programmes, which also meet the contextual issue of ◈ **Lack of cost awareness**, demonstrate a facilitator for top management support. Especially in competitive market situations, the optimisation of corporate efficiency and the knowledge about all occurring costs are major issues (Braithwaite & Samakh, 1998, p. 75). In such environments with an elevated need for accurate cost data, internal support for the change of management accounting techniques is more likely in the search for more sophisticated approaches (Chanegrih, 2008, p. 282; Williams & Seaman, 2001, p. 451). The discussion with and between the case companies supported this impression. HealthCo has just initiated a new corporate cost efficiency programme. SmoCo has established a task force for the continuous identification of corporate efficiency gains. BevCo and PhoneCo, in the course of their individual purchasing restructuring projects, follow guidelines which call for cost consciousness. In all those companies, top management did not have to be convinced of supporting this project in the first place, as was the case within BeautyCo, where no productivity programme was topical. Thus, if a corporate efficiency programme is ongoing, top management realises the value contribution of the designed measurement process and its support becomes likely.
- **Continuous Corporate Planning:** The concept of rolling forecasts, which requires solid planning over more than a one-year period, would facilitate supply management's planning integration. *"Doing rolling 18 months forecast every quarter and if you do that – what happens before or after this particular year event date? – It shouldn't matter"*, as BevCo's head of operations finance stated. Such a planning perception requires continuous input from the planning experts. Considering supply management as one of them, it is forced to conduct continuous supply planning itself in order to be able to deliver the most recent data into the cross-functional planning rounds. After having participated once in such a planning meeting and proven to be knowledgeable, supply management obtains the possibility to enforce its corporate reputation.

5.3.2 Supply Management-Specific Enablers

In contrast to the corporate enablers, the issuance of supply management-specific enablers lies within the scope of competence and responsibility of top supply management. They might require top-down approval, but supply management is their initiator and owner.

- **Representation & Visibility:** *"One of the key changes we did in our savings cornerstone programme was making sure that you have key sourcing representatives sitting in every leadership level."* HealthCo was not satisfied with the establishment of cross-functional teams on an operating level only. By shifting supply management's presence into upper hierarchical levels, it functions as a lobbyist for its personal matters. Supply management's interests as well as competences are represented more intensely and hence top-down support will be more effective as well. However, the prerequisite for this enabler: be knowledgeable in your area – be an expert – otherwise the reason for participating is not given.
- **Global Purchasing Organisation:** In the context of the formation of a global, integrated supply chain, combining purchasing and manufacturing under one common umbrella, purchasing at BevCo had the goal to establish a global purchasing organisation with one global category manager for each category; the same intention as pursued by PhoneCo's CPO. With such an organisational structure, the local entities seize the opportunity to have the status of *"small kingdoms"*, as BeautyCo called them. The global category manager has full transparency of his particular category. He becomes aware of diverging levels of expertise, bundles competences and skills to obtain best efficiency results, and communicates top-down the global category guidelines for mandatory compliance on market level. He is the category expert in the technical sense, but also in the people sense. He knows his team, its behaviour, and mindset, and is hence responsible for abrogating a ◈ **Purchasing with reactive and operating role perception**, but making a proactive and ambitious supply management team. With this insight and knowledge, the global category leader can meet business on an equal level of knowledge and understanding within the planning rounds. Therefore, the formation of a global purchasing organisation does not only refute business's criticism of being operational and non-value adding, but also confronts the inhibitors of efficient data collection and coordination, as the data are called in, enforced, bundled, processed, managed, and monitored on a global purchasing level.
- **Aligned Supply Management Skill Set:** *"It depends on the people"*, as claimed by HealthCo's purchaser. An adequate level of skill set, as the answer to the issue of ◈ **Different levels of expertise and standards**, is indispensable if supply managers are to be respected equally as competent business partners. The processing of data, the conduction of measurement processes, and the management of behaviour requires more than just basic purchasing expertise, as the following citations from the focus group practitioners illustrate:

"That requires probably new skills in your sourcing teams that they can sit around a table and have a proper discussion with business also about quality. That needs to change and we need to help our people to do that" (HealthCo). *"As soon as you talk about specification, it depends on the knowledge of the procurement guy if he's involved in the specification management"* (BeautyCo). *"Now it is also for procurement to realise, who are the right people to sit down, if you send a general buyer with a senior stakeholder with a big budget and there are some confidential projects, you really need to match the reality"* (SmoCo). The advancement of budget effects measurement from being an art to a science depends on the human factors of skills and competence.

- **Aligned Incentive System:** People need to be motivated in order to go along with change. This motivation primarily results from the adequate design of an aligned and holistic incentive system, as the answer to the contextual issue ◈ **Mismatched incentive system**. The simplistic suggestion of SmoCo's operations financer to *"put that on their payroll and I bet they will care"*, was confronted by HealthCo's purchaser who said that *"then probably it's not a culture change; some people just do it for the money and then next year nobody cares"*. To make operating purchasing follow the new measurement approach, planned and on-top budget effects, price and cost reductions as well as the limitation of price increases need to be honoured. The business year as well as the long-term performance perspective has to be incentivised. Another perspective even adds to the challenge of designing an adequate incentive system for this budget effects measurement approach: the overall goal is to hit the budget to prove good planning quality. However, in this understanding, on-top budget effects, which need to be achieved by the supply managers, would be considered negative. Therefore, the bonus system is suggested to be two-fold: the first part of the bonus for not overrunning the budget and the second part as an on-top bonus, for doing an even better job. Purchasing-related statements such as *"it's their job, why reward it?"* by SmoCo's financer are counteracting to the demand of change. The design of an adequate incentive system is thereby not limited to supply management. To reach the pursuance of cost awareness as one common corporate objective, supply management, internal customers, and finance need to align their incentive systems, as supported by HealthCo's purchaser: *"While you are identifying the target, embed it in the bonuses or in the balanced scorecard […] – not only sourcing, not only finance, but if possible also the business."*

The relevance of the previous two enablers can be summarised with the following statement by SmoCo's purchaser: *"If you are credible to your stakeholder, which is the most important thing, […] then they will become less reluctant to have an open discussion with finance when it's about how to polish the budget. But if the stakeholder is in the corner, there is a mad guy from procurement that wants to deliver savings but he does not necessarily know how […] and there is another mad guy from finance that wants to cut numbers, so what do I do? Shall I*

share all my information with them? I am not sure about that, unless you have this baseline information to make things tangible."

5.3.3 Implementation Process – Design Rule 6

Design Proposition 6 – Corporate Commitment:

> If an established organisational structure needs to be changed for the implementation of the designed budget effects measurement concept, carefully analyse the driving cultural factors of the organisational system and elaborate on a system-adequate implementation process to create the basis for a sustainable implementation through supply management's motivation of becoming an equal business partner.

The discussion with the different case companies has shown that implementation of the designed measurement approach will involve change to a certain degree, dependent on the maturity level of the company. Since, Neely and Bourne (2000, p. 5) state that "measurement initiatives fail because of difficulties during the implementation phase" and in addition, Shields (1995, p. 150) find that "ABC success will be increased when […] behavioural and organisational variables are used in concert, as part of an integrated implementation strategy", the draft of an appropriate implementation process as final outcome of this thesis is justified.

Currently, there are two streams of discussion within implementation research: the supporters of a recipes-based approaches and their opponents. A recipe-based approach depicts the implementation process defined as an n-step guide. These steps are pre-defined in a varying degree of precision and need to be followed to reach implementation success. Common representatives of this view are among others: Buchanan and Huczynski, 2004; Hussey, 1998; Kotter, 1995; Lin et al., 2001; and Shields and Young, 1989. They either describe the different phases of implementing a project or give clear advice for success. Such an approach offers a checklist of required actions and common sense, based on previous implementation experience. However, they are also exposed to the criticism of being oversimplified and universal, not capturing all the relevant contextual change factors (Buchanan & Huczynski, 2004, pp. 626-627). Ellram (1994, p. 188) supports the latter view by stating that there is no standard approach for successful implementation. Having read the different argumentation flows of the two streams, one notion solidifies: both are right. Of course, it is not possible to capture all relevant steps to approach each single possible contextual incident within a prescriptive implementation guideline. "The whole is more than the sum of its parts", as already stated by Aristotle in his Metaphysics, alluding to the existence of synergy effects. Even if two companies have an identical contextual setting, the interplay between these factors will always differ and lead to new different contextual issues. However, why should practitioners not have the chance to learn from practical and theoretical experience about general implementation do's and don'ts?

Therefore, to approach the identified corporate contextual issues and the complemented inhibitors, an **implementation code of practice** is developed for the designed measurement process. It will focus on the special concerns of the measurement issue, and its fundamental idea and process will be feasible for the majority of companies. The eventual operationalisation and realisation of this code of practice depend on the individual demands, contextual setting, momentum, mindset, and culture of the specific company.

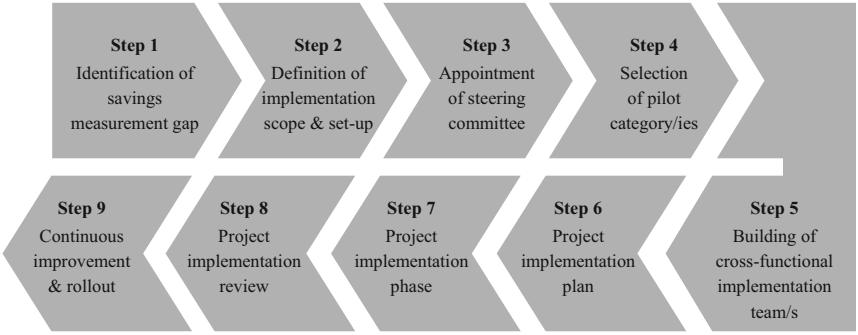

Figure 65: The designed nine-step implementation approach – Implementation code of practice.

Referring to Bastl et al. (2007, p. 96) and based on the experience at PhoneCo, the implementation code of practice is based upon a nine-step implementation process, pictured in Figure 65. However, before the first step can be initiated, supply management has to make sure that top management provides interest and general support to the idea of measuring budget effects. The supply manager has to explain precisely the idea, efforts, nature, and usage of the outcome to top management (Anderson, Davis, Davis, & Twomey, 2004, p. 42). *"If you cannot put it in a comprehensive short way what exactly [it is] what you are trying to do and how […], people see a big white elephant and say: it all looks nice, it all looks like the future, but I need to work somewhere else."* As supported by HealthCo's opinion, tangibility and transparency of outcome and benefits are crucial for the creation of business support.

Step 1: The rather high degree of complexity of the designed budget effects measurement approach in terms of process and commitment has been sufficiently analysed. Thus, it is not advised to implement the measurement approach as a whole, but to break it down into its different measurement elements and to set an implementation focus via prioritisation. For this reason, the individually defined target state is mapped against the current state of each component, **visualising savings measurement gaps**.

Step 2: With this information, the supply manager can **define the implementation scope** as the next step. He decides upon the prioritised handling of the identified measurement gaps and with it lays the basis for a focused implementation of the various measurement process

components. *"There are some areas that are very important […]; that's the basic things that you need to be top. While some of the things – for me – are like a second step."* If supply management does not develop an implementation strategy, as advised by HealthCo, the risk of chaos – counteracting to sustainability – emerges. Furthermore, the overall **implementation set-up** concerning the involved functions and project coverage requires concretion. Especially the latter plays an important role, because – regarding HealthCo – "*if you concentrate on your key projects […], you will cover like 80-85% of your savings. Question: do you want to hire an army to track the other 15%? Probably not, you don't care"*. Focus and prioritisation evolve as additional crucial characteristics of sustainable implementation.

Step 3: Shields and Young (1989, p. 18) relate to the 'champion' from the top hierarchical level guiding the implementation. An **appointed steering committee**, composed of top-level representatives from each involved function, is supposed to act as controlling and monitoring entity. *"You have very capable people but they don't have access to the discussions, so you need to open doors for them"*, as HealthCo's purchaser described one of the tasks of the steering committee. On a regular basis, the project managers provide this committee with a status report about achieved results, risks, and further steps. As SmoCo commented: *"It's all about leadership."* A critical issue, however, is to get the support and required capacity of each relevant function for a supply management project. Obtaining corporate commitment – also claimed to be important by Argyris and Kaplan (1994, p. 83) – again requires strategy. For this reason, SmoCo suggested a more offensive approach: *"If you don't know as stakeholder what is behind the number, you are as wrong as finance or procurement."* BevCo, alternatively, proposed the more effective budget handling as argument for collaboration: *"It is about helping to manage that process more carefully so that we can make good decisions about the size of the budget given what we want to deliver as a result out of it."* The benefit of more realistic and accurate budgets and the risks of under-budgeting (e.g. supplier shortage) and over-budgeting (e.g. ineffective capital allocation) have to be conveyed to finance. An alternative would be SmoCo's confrontation strategy again: *"Either you want to do a proper job, which is more analysing, and it's more adding value, or you are a data monkey. It's for you to choose."*

Step 4: After having formed the steering committee and gained its internal commitment, the project scope requires further concretion. It is not advisable to try to implement the measurement approach within the entire corporate setting at once. Since several rounds of adjustment and improvement will be required due to company-specific factors, a trial and error period with a pilot should precede the company rollout. Depending on the organisational structure, either one or several global categories – following a set of selection criteria (Appendix CC) – or the purchasing organisation of a small business unit can be **selected as pilot**. HealthCo's purchaser argues the following: *"Instead of just choosing a project or a category, try to select*

a medium sized country, something that is manageable […]. Because that's like a small organisation; if it works, you can make it bigger." It is a matter of capacity for and capability of handling complexity, since the implementation within an entire business unit, as experienced within PhoneCo, is more complex and hence will require more resources.

Step 5: To create the adequate basis for **cross-functional** measurement, the **implementation team** should also be recruited from the different relevant functions and hierarchical levels, as supported by Wouters et al. (2005, p. 186). Each team member is given, corresponding to its competence, clear roles and responsibilities for the implementation project. Swenson and Barney (2001, p. 42) thereby characterise the team members as "energetic, enthusiastic, and highly competent". Full-time availability of the team members is another feature that needs to be given, since otherwise the daily workload will remain top priority and the implementation be eclipsed and eventually not completed (Anderson et al., 2004, p. 43; Foster & Swenson, 1997, p. 121; Shields, 1995, p. 163). This phenomenon was experienced at PhoneCo and supported by the case companies. Cohen, Venieris, and Kaimenaki (2005, p. 981) find that the adequacy of the implementation resources has a significant influence on the occurrence of implementation problems. Therefore, the formation of the implementation team should be exercised with reasonable care.

Step 6: Having set-up project people and scope, the **project implementation plan** needs to be issued before the actual implementation is initiated. The basic question to be answered is: who needs to talk to whom about what until when? A timeline has to be drawn with all the relevant milestones, deadlines, and project phases. It is essential to be permanently aware of the implementation status, and have the transparency of the risks and challenges, to apply corrective actions if required and guarantee continuous target focus.

Step 7: The six previous steps mark the pre-implementation period, since only preparatory tasks are performed. With this step, the **implementation phase** begins. The project plan and objective need to be communicated to the operating basis to gain their understanding and realisation support as well. Status quo analyses must be conducted, the target process designed, and those steps and tasks defined which are necessary to reach the target state. Eventually, the defined measurement components are implemented. This implementation phase needs to last at least 18 months to cover all measurement steps in real-time: from the planning until the reporting of the accomplished budget effects.

Step 8: In certain pre-defined time intervals, the status of the **implementation project** has to be reported and the results **reviewed**. Therefore, this step cannot be considered as subsequent to the previous one, but intersecting. Implementation monitoring and reviewing have to be continuous actions in order to check the status of the target approach.

Step 9: The final step of the code of practice is the **continuous improvement and corporate rollout**. Even if the pilot was implemented successfully, training and education of the affected people have to be maintained in order to achieve a sustainable implementation. Supply managers have to internalise the new measurement approach; otherwise, they will fall back into their old measurement as well as mindset patterns (Anderson et al., 2004, p. 44). Hence, SmoCo introduced institutionalised feedback loops between supply management, internal customers, and finance to make their process more robust. *"Because every time you [from the] global level ask something from a country, they think that this is throwing information away and they'll never see what we do with it or how we can make a change. That's what I call a feedback loop."* Alternatively, HealthCo installed biannual global sourcing meetings: *"You get the heads of the regions together. You have an agenda of two or three days: savings definition, any change to the global ways of working that gets explained by the same person, so then that's the consistency that you get."* These meetings function as a global purchasing communication platform – to exchange information and new knowledge – and as a training platform, since the heads of global purchasing coach and train the regional heads and thereby regularly refresh the progressive supply management mindset, achieved in the context of the new measurement approach. BeautyCo, too, has established global training sessions for the implementation of its savings guidelines and tools. Target-oriented communication and training, during and still after the actual implementation phase, will create sustainability.

By following these generic steps of this code of practice and operationalising them consistently to the overall budget effects measurement mindset, the mission of any implementation advice, as stated by SmoCo's purchaser, should be achievable: *"It is bringing people on the journey, rather than killing them with new concepts."*

Design Rule 6 – Corporate Commitment:

If an established organisational structure needs to be changed for implementation of the designed budget effects measurement concept, to create the basis for a sustainable implementation,

I^{1} Make your supply management issues corporately visible by being represented within each of the hierarchical levels and important committees;

I^{2} Introduce a global purchasing organisation with global category leaders that dispose of the full transparency of their category team with its skill- and mindset;

I^{3} Introduce global purchasing training and education initiatives for the functional skill set alignment;

I[4] Facilitate change and a common mindset by adjusting supply management's incentive system to the new requirements and aligning it with the incentives of internal customers and finance;

I[5] Pursue a structured implementation process by operationalising the presented implementation code of practice. Be aware of the pre-implementation steps, which largely regulate the implementation failure or success, and the post-implementation steps, which determine the final degree of sustainability!

5.4 Interim Result: One Design Rule as a Guideline for the Implementation and Organisational Set-Up of the Budget Effects Measurement Process

While doing research within the company settings, it has been noticed that there is more to the challenge of measuring supply management's budget effects than just the measurement process design. "The root cause of system disuse was a failure by system designers to recognize [!] the socio-technical setting in which […] data are used." With this statement, Anderson (1995, p. 8) supported this impression. Therefore, the design of a comprehensive process to measure supply management's budget effects was decided to be rounded off with an excursus into the implementation issues, which are likely to occur. The argumentation flow of Chapter 1 is pictured in Figure 66.

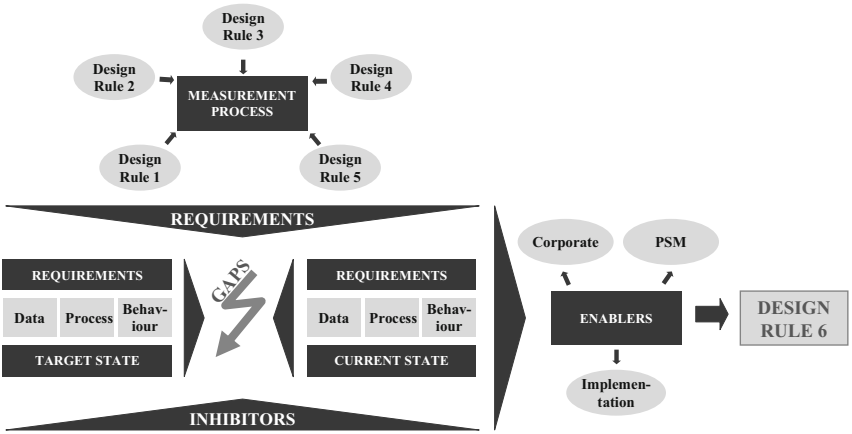

Figure 66: Flow of argumentation in Chapter 5.

The budget effects measurement process can be designed by following the five design rules. However, to be able to apply those rules successfully and obtain satisfactory measurement results, certain requirements need to be fulfilled in the corporate setting. Along the three pillars – 'data', 'process', and 'behaviour' – ten different requirements were identified: data

completeness, open communication, entrepreneurial spirit, common measurement mindset, standardised process design, high data quality, data transparency, budget transparency, rational budgeting, and process consistency. Within the enlarged focus group setting, the validity of these measurement process requirements was approved.

At the same time, it was noticed – based on a workshop questionnaire – that none of the case companies currently met these requirements completely. Requirement gaps between the target and current state were obvious. Based on the observation that the size of some requirement gaps differed significantly already between companies of comparable size, industry, and measurement ambition, it was concluded that no universally valid and detailed prescription could be provided for implementation issues. Implementation simply depends too much on company-specific factors, especially concerning soft factors such as culture, behaviour, and commitment.

To receive further insight into these matters, the focus group companies were asked to elaborate jointly on the gap-causing parameters – so-called inhibitors. The distribution of the identified inhibitors along the data-, process-, and behaviour-dimensions again has shown that the majority of potential implementation barriers is of a behavioural nature – confirming Anderson's statement above. With the enumeration of the 39 inhibitors, it was intended to draw supply managers' attention to the implementation challenges. One has to be aware of those potential obstacles before the process implementation was initiated to achieve implementation efficiency. In the course of these discussions, the case companies also mentioned some enablers to face the inhibitors. Those, which make no claim to be complete, build the focus of the final part of this chapter – the managerial implications.

Corporate enablers facilitate the introduction of the budget effects measurement approach. However, supply management can neither trigger nor influence them directly. Those enablers are: top management support, corporate productivity programmes, and continuous corporate planning. Supply management-related enablers, in contrast, lie entirely in supply management's scope of responsibility. Those enablers are: representation and visibility, global purchasing organisation, aligned supply management skill set, and aligned incentive system. If those enablers are created within the company and supply management, the majority of inhibitors can be avoided or their impact diminished.

In addition, a generic implementation code of practice was formulated. Even if no detailed prescription was concluded to be feasible for implementation issues due to the varying contextual issues, a general nine-step guideline was designed primarily based on the author's implementation experience at PhoneCo. This code of practice advises supply managers on how to proceed when implementing the designed measurement process. The company-

specific operationalisation and application of these steps, however, lie in the scope of competence of each supply manager.

Consisting of the supply management-related enablers and the implementation code of practice – emphasising the pre- and post-implementation phases for a sustainable implementation effect – the final Design Rule 'Corporate commitment' was formulated.

6 All-Encompassing Final Statements

It was the objective of this thesis to design a generally valid process, which enables supply management to measure its financial effectiveness in form of the Return on Spend. This thesis can be considered as a gate-opener for this recent field of research. The author adapted a generalist-perspective and approached the problem set from various angles, thereby gaining access to, and broadening the scope of, even more relevant topic-related issues, which generate room for future research. Therefore, the claim to present complete and final solutions was never made. However, it was intended to provide the reader – scientist and practitioner alike – with initial drafts and thoughts from a holistic point of view and to trigger further research within the diverse aspects of measuring supply management's financial effectiveness. Thus, limitations of research have to be mentioned and the most apparent potential for future research outlined. Finally, the findings of this thesis are summarised in form of all-encompassing statements.

6.1 Limitations of Research

Referring to the conducted large-scale survey, only a selection of the BME-symposium participants could be queried due to resource constraints. Despite the comparably high response rate of 23.5%, the sample size of 72 respondents would lead to doubts regarding the generalisability of the obtained survey results. However, since it was not the purpose to test cause-effect relationships, but to obtain initial implications regarding the relevance and movement of the savings measurement practice, this does not dilute the statement validity of the design propositions.

Based on Edmondson and McManus (2007), a hybrid research strategy, consisting of quantitative as well as qualitative methods, was chosen. Thus, as a first step, descriptive analyses form the focus of the quantitative research section opening and structuring the field of savings measurement. The exploration of cause-effect relationships, as a required second step, will play an essential role within future research. To gain a broad insight and become aware of current issues and requirements towards measuring supply management's financial effectiveness, a multi-methodological approach was applied even within the qualitative section. This approach, however, led to the quite complex connection of the different case study methods. Since each method could only be touched upon for scope reasons, in future work, each method should be extended and explored further in detail – separately or as a different combination – to extract more company-specific knowledge about one certain aspect of measuring supply management's financial effectiveness.

Since the majority of the focus group companies was directly active in the FMCG sector or at least within an industry that resembled its characteristics, the two companies for the observa-

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tional single case studies were also selected from the FMCG industry for comparison reasons. Thus, the obtained process results are primarily based upon the input and experience from industries, which are OPEX-driven and manage a wide product range with a high sales rate, and hence reflect mostly their needs and requirements. This issue also refers to the completeness of the inhibitors list, elaborated exclusively in the focus group setting and compared with findings from literature. This list is not exhaustive. If more companies from different industrial sectors had been asked, additional process barriers could have been potentially identified. However, this is an issue of future research.

6.2 Future Research

Return on Spend was newly developed as an indicator of supply management's financial effectiveness. For its calculation, reliably measured budget effects, whose measurement procedure was designed in the context of this thesis, are critical. However, supply management's organisational costs and spend are necessary RoS-constituents as well, which could not be fully explored due to the restricted scope of this thesis. In particular, spend transparency poses a major challenge in today's purchasing practices. Since reliable RoS results also depend on the accuracy of supply management's organisational costs and managed spend, their exploration forms an important field of future research.

The understanding of supply management was modified by defining it as a proactive purchasing function, which takes the lead within cross-functional sourcing teams and manages corporate supply as cost challenger. However, the definition of the composition of such cross-functional teams and in particular the range of active participants was not within the scope of this thesis. Yet, this definition is relevant, since transparency and clarity of attributable costs within this cross-functional setting have to be given when calculating supply management's organisational costs for the RoS.

Each design rule provides room for further research. An implementation process of the designed measurement process, following the six design rules and testing their general feasibility, has not been accomplished yet, but would function as immediate continuation of this research project. In addition, the process-validity in a CAPEX-driven environment has not yet been investigated. Thereby, a focus should be laid upon sustainability. The implementation issues could only be touched upon and are not discussed in sufficient detail. Since the appropriate mindset of supply management is the major critical success factor of the designed process, further research regarding training and corporate commitment is considered relevant.

Within this thesis, only financial effectiveness has been discussed, overall supply management's effectiveness was out of scope. However, it was often mentioned especially by

practitioners that the effects of qualitative achievements, such as supply risk management and supply continuance, which cannot be directly expressed in financial terms, also have to become tangible. Future research on effectiveness should hence focus on qualitative achievements, embed the RoS in a holistic effectiveness management system, and pursue a multi-dimensional measurement approach.

Eventually, if all these issues have been explored in detail, the scope of effectiveness can even be broadened: from effectiveness of intra-organisational supply management to effectiveness of inter-organisational supply chain management.

6.3 From Planning to Measurement – Six Design Rules as Guidance for a Solid Measurement Approach of Supply Management's Budget Effects

(1) 'Effective supply management' becomes the required status to gain corporate recognition as equal business partner, since supply management's corporate development is stagnating due to an existing perception gap regarding its corporate value contribution.

Supply management is responsible for procuring products and services, which already equal more than half of the average manufacturing company's sales volume. Based on this responsibility and in combination with its strategic development and advanced skill set, supply management claims corporate recognition as equal business partner. As shown in the literature, the function perceives itself as ready for this overdue promotion. Other corporate functions and top management, however, have a different perception of supply management's corporate role and achievements, since they lack proof of effectiveness of supply management's accomplishments. They do not realise the potential for promotion yet. Therefore, a perception gap has been emerging.

Since supply management has direct influence on cost of sales and is hence one of the most important corporate profit levers, the perception gap can greatly be diminished if the function is able to show its effectiveness in terms of its bottom line contribution – becoming 'effective supply management' in its final development stage. This proof – in contrast to the currently reported, biased price reductions – has to be comprehensive, transparent, objective, and reliable. In addition, to be considered corporately effective, the function has to be aligned with corporate objectives; otherwise, it would be a solo attempt. Thus, supply management can only be regarded as corporately effective if it works on efficiency gains in collaboration with the internal customers. It depends on cross-functional knowledge input to be effective.

Therefore, the understanding of supply management calls for further modification: supply management is a purchasing function, which coordinates based on its advanced skill set as supply expert and cost challenger a cross-functional sourcing team. Supply management's

effectiveness thereby refers to the functional value contribution, which is achieved in its completeness only through this cross-functional activity of managing supply. As a consequence, measuring supply management's effectiveness in this understanding requires a new savings measurement approach, which has to deal, due to evolving uncertainty, with the principal-agent problem.

(2) Only with the newly developed indicator 'Return on Spend', which is based upon budget effects instead of price savings, can supply management's financial effectiveness be determined in its original sense.

Since top management and shareholders expect to see the bottom line effects of supply management's achievements expressed through one financial term, the application of traditional performance management systems which respect multiple performance dimensions, is not appropriate for effectiveness measurement purposes.

Effectiveness or profitability visualises quantitatively the degree of target achievement. But such a figure does not yet exist for supply management. Thus, only savings were used as a demonstrator of effectiveness, which do not comply with the required measurement standards and hence lead to biased results. Consequently, a new effectiveness indicator was developed, which crosses the finance boarder and is based on the RoI-concept:

$$\text{Return on Spend} = \frac{\text{Supply Management Savings} - \text{Supply Management Cost}}{\text{Total Supply Management Spend}}$$

With this formula, it becomes possible to measure supply management's financial effectiveness in its true sense: its profit in the numerator and the profit means in the denominator, thereby applying the modified definition of supply management.

However, one problem still remained unsolved: the calculation of the RoS also depends on savings, which are – due to their intransparency – neither comparable nor reliable. As a valid alternative, budget effects are introduced. Since supply management claims to contribute value not only in the sense of price but also total cost reduction, and financial reporting issues enjoy corporate acceptance of being objective, the transformation of savings into budget effects was self-evident. If supply management can show its financial value contribution in budgetary terms, its bottom line impact can be directly demonstrated. In addition, since corporate planning involvement becomes necessary for these purposes, it can prove in direct interaction with budget holders and finance its competence and skill set, thereby further approaching its target status of equal business partner. It becomes possible through budget effects and supply management's budgeting integration to make those cost reductions tangible that are currently already naturally included in the budgets, and those that can be achieved on

top of the budget during the year. With this approach, direct P&L effectiveness and supply management's comprehensive achievements become visible.

(3) Measuring supply management's financial effectiveness requires an innovative and integrated measurement approach, since change in terms of process as well as organisation plays a significant role.

Based on the results of the literature analysis, three construction principles were formulated, which form the general structure of the budget effects measurement approach:

(I) Actual Measurement Process: To measure budget effects reliably, supply management needs to enter the budgeting process as strategic category expert and develop category strategies based on the information obtained in the cross-functional setting. The individual category strategies, operationalised through savings initiatives, need to be realised in a structured manner for consistency reasons. A monitoring function provides transparency during the planning and the adjacent realisation phase.

(II) Corporate Alignment: The measurement approach needs to be linked to corporate objectives in order to obtain corporately recognised effectiveness and avoid criticism of operating single-handedly.

(III) Commitment: Supply management needs to show intrinsic motivation to undergo the change to integrated and effective supply management, and internal customers and finance need to be willing to grant access to their already established organisational and processual planning systems.

(4) The relevance of measuring supply management's bottom line impact is given in practice; however, well-developed measurement concepts are not implemented yet, as recent survey results indicate.

86% of the survey respondents regarded the measurement of supply management's bottom line contribution as a relevant issue, the main reason being that the purchasing function wanted to prove its achievements and communicate them internally. Supply management's eagerness to enhance its corporate development was clearly noticeable from the participants' answers. But it became also apparent that current savings measurement practices did not yet comply with the required savings measurement standards, such as the consistent application of measurement baselines and savings definitions. In addition, the still prevailing consideration of price reductions in contrast to process cost reductions and their determination at the end of the year rather than planning in advance, show that traditional savings measurement approaches, which are not fully capable of proving supply management's full value contribution, are still dominating in practice.

(5) To increase the certainty on the measured savings a measurement approach consisting of clearly pre-defined measurement steps and characteristics is important.

The construction principles as measurement process elements were added and operationalised by means of different measurement activities and characteristics, which referred either to one of the measurement process elements, the integration aspect, or measurement prerequisites. The evaluation of each component regarding its ideal, current, and future implementation in the savings measurement context, showed that the idea to start measurement already with planning, appealed to the respondents. However, it was also noticeable that there is still a way to go to reach the individually defined ideal measurement status.

Four components were identified that contribute to the certainty of the obtained measurement results. The more supply management is involved in the budgeting process, develops sound category strategies, and links realised savings directly to the performed purchasing initiative, the more supply managers are certain on the validity of their reported savings. If reporting structures are transparent and objective, even the doubts of external savings addressees regarding the savings correctness are expected to be diminished.

(6) In practice, common contextual issues appear, which have a great impact on the design of a feasible and relevant budget effects measurement approach.

In total, 43 different contextual issues were identified in the collaboration between academia and practice. Only ten out of these were mentioned by just one company. The ones with the highest degree of density were issues related to unofficial savings reinvestment during the year and irrational budgeting behaviour, which apparently pose the major challenges to the intended measurement process. Also, expected corporate resistance, unaligned languages, and the operating perception of supply management by other corporate functions were mentioned as contextual factors which require special attention in terms of the detailed measurement process design. Alignment, innovation, and change – referring to supply management itself as well as the other affected parties – hence are of major concern in the measurement process design. Therefore, it has to be the concept's main strengths – beside solid measurement – to provide all affected measurement parties with guidelines and tools to enforce change and integration.

(7) A thorough preparation phase, which is based upon three design rules, equips supply management with the most essential information and guidance to obtain reliable measurement results at the end of the business year.

Design Rule 1 'Measurement Prerequisites'

Supply management is advised to develop a cross-functionally accessible measurement handbook with all relevant measurement information. In addition, the category layout should

be drafted and a translation matrix be designed to obtain full category transparency and achieve a common cross-functional language and coding.

Design Rule 2 'Supply Planning'
In order to become one of the budgeting parties, supply management has to perform category cost management and conduct within the cross-functional setting comprehensive market research on a category level. In the role of the cost challenger, supply management needs to elaborate category strategies on a savings initiative level.

Design Rule 3 'Corporate Planning Integration'
There is no single-best solution for budgeting integration, since it depends on the company-specific budgeting policy. However, planning integration is the critical success factor for measuring budget effects, since supply management can obtain the relevant data only as an integral part. Therefore, it has to be ambitious and knowledgeable, and establish a precise process chart with clear roles and responsibilities.

(8) The planning results have to be elaborated and implemented in the realisation phase, based on two design rules, in order to reach consistency throughout the entire measurement process.

Design Rule 4 'Realisation & Monitoring'
The realisation of the planned budget effects has to be monitored to evaluate the budget effects on initiative basis. Through a Degrees of Realisation concept, the stepwise tracking of the realised budget effects is accomplished. For on-top budget effects, a so-called 'pot-system' prevents unsystematic savings reinvestment.

Design Rule 5 'Measurement & Reporting'
A joint savings understanding, a fixed measurement baseline, and prioritised reference points form the prerequisites for meaningful measurement results. The acknowledgement of planned as well as on-top budget effects as part of supply management's bottom line impact is also crucial. Two-fold reporting – supply management vs. stakeholder-oriented – provides incentives for quick wins as well as long-term supply management achievements.

(9) The successful implementation of the designed measurement process eventually depends on the fulfilment of data-, process-, and behaviour-related requirements.

It is self-explanatory that data need to be complete in order to reach meaningful measurement results. A standardised process design is also required to provide transparency and solid guidance throughout the measurement process. Data and budget transparency, as an inter-section of data and process, are necessary for the rationale. Only if data sources and budget composition are traceable, can unbiased measurement become possible, since fault and room for manipulation are diminished. Behaviour as the third requirement dimension, refers among

other things to the necessity of entrepreneurial spirit – for supply management as well as internal customers and management accounting. Only ambitious functions are willing and capable of creating open communication and a common measurement mindset as two additional requirements in a cross-functional setting. High data quality – as a combination of behaviour and data – which depends on the knowledge contribution from all relevant budgeting experts, and rational budgeting – related to behaviour and process – which refers to budgeting practices that are based on the price-volume logic, represent further measurement prerequisites. Process consistency links all requirement dimensions, since data, process, and behaviour need to be aligned and comply with the defined measurement standards, as acting in concert is crucial for the measurement of comprehensive and unbiased budget effects.

(10) None of the defined measurement requirements is entirely fulfilled in practice at the present time, since those requirements apparently relate positively to time and examination.

The case companies, which can be considered – based on their research participation – as highly interested in this measurement issue, demonstrated, after having evaluated their individual status of the measurement prerequisites, that none of the defined requirements was currently fulfilled to its total extent – at least in their case. Partly significant requirement gaps became obvious, especially for those companies which were still in the midst of emancipating savings measurement within supply management and even within the corporation itself. This shows that the longer and more intense a company elaborates on the savings measurement issue the more advanced the practices become – actually, a self-explaining result. This, however, shows that even ambitious supply management departments still show room for improvement on their way to conquer the identified measurement inhibiting factors, which cause these requirement gaps.

(11) A structured implementation approach forms the major supply management-related enabler for the sustainable realisation of the designed measurement process.

Design Rule 6 'Corporate Commitment'

For a sustainable implementation of the designed RoS-measurement approach, supply management depends primarily on top-down support. Thus, it has to lobby for its concerns on different hierarchical levels. In addition, it needs to become globally professional, adapt its incentive system, enhance its skill set, and pursue a structured measurement process implementation procedure, with the emphasis on a change of mindset.

The nine-step implementation process starts with the identification of the savings measurement gap. If there is neither a gap nor top-down support to approach the gap, a sustainable implementation success cannot be expected. The clear definition of the project

scope, the elaboration of implementation schedules, and the involvement of all process-affected parties already within the project team, avoid a sudden confrontation with a new situation, but offer a gradual approach towards sustainable change.

> *(12) With this work, the gate was opened to the research field of measuring supply management's financial effectiveness, which calls for further investigation to establish sustainable approaches, characterised by scientific rigour as well as practical relevance and feasibility.*

This research was conducted under the design paradigm. Gradually and in constant interaction with practice, prescriptive knowledge in the form of the comprehensive budget effects measurement approach was designed. However, this was only the initial step towards the solution of this apparently simple measurement problem.

It has been shown that a change in supply management's savings measurement practices and its integration into corporate planning and budgeting processes are essential for measuring its bottom line impact. However, since measuring supply management's effectiveness involves more than calculating budget effects within the Return on Spend framework, there is great room for future research in the field of financial supply management. With this thesis, only the foundation has been laid, since after all – in BevCo's words –, *"it is ongoing. It is not like there is a true defined process"*.

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Appendix

Appendix A: Questionnaire.

Measurement of Supply Management's Bottom Line Impact –
Status Quo and Future Requirements
Pages 238-244

A. Quitt, *Measuring Supply Management's Budget Effects,*
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CONTACT

Study Characteristics

- This study is designed to be innovative, problem-oriented and related to both science and practice. We address leading European companies of different sizes and industries in order to obtain general and broad insight into the current practice concerns.

Processing Notes

1. Your answers will be handled confidentially and analyzed anonymously. This questionnaire serves for scientific purposes only. The analysis reports will also be anonymous.
2. Even if you are not able to answer all the questions, each returned questionnaire contributes tremendously to the success of the study.
3. If certain issues are beyond your knowledge or sphere of responsibility, we kindly ask you to make a qualified estimation.
4. If you are interested in the results of our study, please fill in the contact form below and send it back with the completed questionnaire. The anonymity of your answers is still guaranteed.

Contact Information

Please fill in your contact information or attach your business card.

Surname:	
First name:	
Position:	
Department:	
Company:	
Address:	
Phone:	
Fax:	
E-mail:	

Study Results

Please send the following results of analysis to me at no charge:

- ☐ The results of the study.
- ☐ Insights into the innovative measurement approach, which is deducted potentially from the study analyses.
- ☐ An industry-specific benchmarking and recommended courses of action.
- ☐ Information on future studies regarding "Supply Performance Measurement".

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MEASUREMENT OF SUPPLY MANAGEMENT'S BOTTOM LINE IMPACT – STATUS QUO & FUTURE REQUIREMENTS

The Purchasing department has emerged from an operative function to a strategic business partner that deserves recognition of its contribution to the bottom line and the Profit & Loss account (P&L) respectively. However, despite its functional enhancement, the performance of Purchasing and Supply Management is still limited to the focus on simple cost reductions.
The goal of this study is to obtain feedback on the requirements for a concept which captures supply performance holistically and provides objective evidence for its performance through substantiated measurement of its impact on the P&L.

A. FIRM SIZE

1. Indicate your company industry or sector:

2. Approximate annual sales in 2007:

   ☐ less than €500 million
   ☐ €500 million to €1 billion
   ☐ €1 billion to €5 billion
   ☐ €5 billion to €10 billion
   ☐ greater than €10 billion

3. Approximate annual purchasing volume in 2007, which falls under the responsibility of Purchasing and Supply Management (Assigned Spend excluding Maverick Buying[1]): €

4. Approximate number of employees (total company) who belong to the Purchasing and Supply Management department: employees

B. THE RELEVANCE OF MEASURING BOTTOM LINE IMPACT

5. To what extent do you agree with the following statements?

Please check one per line	Totally disagree	Somewhat disagree	Indifferent	Agree	Totally agree
In our company, Purchasing and Supply Management finds itself increasingly in the position of justifying its right of existence within the company.	☐	☐	☐	☐	☐
In our company, upper management considers the measurement of Purchasing and Supply Management's contribution to the bottom line/P&L as a very relevant issue.	☐	☐	☐	☐	☐
In our company, we already apply a well-developed concept that measures the bottom line/P&L impact of Purchasing and Supply Management precisely.	☐	☐	☐	☐	☐
Comments:					

6. How important is the solid measurement of Purchasing and Supply Management's bottom line impact to the following hierarchical functions?

Please check one per line	Function does not exist	Not at all	Slightly	Moderately	Substantially	Extensively
Chief Procurement Officer (CPO)/Head of Purchasing	☐	☐	☐	☐	☐	☐
Chief Executive Officer (CEO)/Managing Director	☐	☐	☐	☐	☐	☐
Chief Financial Officer (CFO)/Head of Finance	☐	☐	☐	☐	☐	☐
Chief Operating Officer (COO)/Head of Operations	☐	☐	☐	☐	☐	☐
Head of Business Unit/Head of Division	☐	☐	☐	☐	☐	☐
Other:	☐	☐	☐	☐	☐	☐

[1] Maverick Buying is this part of the purchasing volume that officially falls under the responsibility of the Purchasing and Supply Management Department but is purchased by internal customers themselves.

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C. SAVINGS MEASUREMENT PRACTICE

7. TOTAL SAVINGS

In the context of this survey, savings are considered as the total amount of different types of savings, such as cost reduction, cost avoidance, free-of-charge extras, TCO-reduction, process compliance, risk management, etc., achieved within one business year through comprehensive Purchasing and Supply Management activities.

7.1. Measurement of total savings

In our company, the savings achieved by Purchasing and Supply Management...

- ☐ ...are currently measured.
- ☐ ...are currently not measured, but are planned to be measured in near future.
- ☐ ...are currently not measured, and are not planned to be measured in near future.

7.2. If savings achieved by Purchasing and Supply Management are measured in your company, please indicate why they are measured:

Please check one per line	Totally disagree	Somewhat disagree	Indifferent	Agree	Totally agree
To communicate performance of Purchasing and Supply Management internally.	☐	☐	☐	☐	☐
To communicate performance of Purchasing and Supply Management externally.	☐	☐	☐	☐	☐
To prove the achieved objectives.	☐	☐	☐	☐	☐
To reach budget adjustments.	☐	☐	☐	☐	☐
To report savings as instructed by the hierarchically higher level.	☐	☐	☐	☐	☐
Other:	☐	☐	☐	☐	☐

7.3. Supply savings measurement shows certain critical aspects which are essential to consider in obtaining solid measurement results. Please indicate to what extent you agree with the following statements:

Please check one per line	Totally disagree	Somewhat disagree	Indifferent	Agree	Totally agree
In our company, our measurement process follows certain pre-defined measurement guidelines.	☐	☐	☐	☐	☐
Comments (concerning your grading or in general):					
In our company, we identify savings by comparing past costs/prices with current purchase costs/prices.	☐	☐	☐	☐	☐
In our company, we identify savings by comparing planned budgets with realized budgets.	☐	☐	☐	☐	☐
In our company, we identify savings by comparing past contracts with current contracts.	☐	☐	☐	☐	☐
Comments (concerning your grading or in general):					
In our company, the time reference point for savings measurement is always the previous accounting year.	☐	☐	☐	☐	☐
Please specify if other time reference points are used in your company:					

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	Totally disagree	Somewhat disagree	Indifferent	Agree	Totally agree
In our company, we have a standardized set of measurement baselines in which their use is clearly defined for the savings calculation of *initial purchases*.	☐	☐	☐	☐	☐
Please indicate 3 measurement baselines most often used in your company for *initial purchases*:					
In our company, we have a standardized set of measurement baselines in which their use is clearly defined for the savings calculation of *re-purchases*.	☐	☐	☐	☐	☐
Please indicate 3 measurement baselines most often used in your company for *re-purchases*:					
In our company, reduced costs are fully considered as savings.	☐	☐	☐	☐	☐
In our company, avoided costs are fully considered as savings.	☐	☐	☐	☐	☐
In our company, benefits obtained through free-of-charge extras, TCO-reduction, process compliance, risk management, etc. are considered as savings.	☐	☐	☐	☐	☐
Comments (concerning your grading or in general):					
In our company, we plan total savings and track their realization throughout the year.	☐	☐	☐	☐	☐
In our company, we determine total savings at the end of the accounting year.	☐	☐	☐	☐	☐
Comments (concerning your grading or in general):					

8. BOTTOM LINE-EFFECTIVE SAVINGS

In contrast to total savings, which are often not directly transferred and linked to the corporate result, bottom line-effective savings are only those savings that have a direct and traceable impact on the Profit & Loss-Statement and on the annual corporate result.

8.1. Measurement of bottom line-effective savings

In our company, bottom line-effective savings achieved by Purchasing and Supply Management...

☐ ...are measured separately. (Since ____ years)

☐ ...are currently not measured, but are planned to be measured in near future.

☐ ...are currently not measured, and are not planned to be measured in near future.

8.2. If you measure bottom line-effective savings achieved by Purchasing and Supply Management, please indicate if you measure them pro-actively or retrospectively:

Please check one per line	Totally disagree	Somewhat disagree	Indifferent	Agree	Totally agree
In our company, we plan bottom line-effective savings and track their realization over the year.	☐	☐	☐	☐	☐
In our company, we deduct bottom line-effective savings from total realized savings at the end of the accounting year.	☐	☐	☐	☐	☐
Comments (concerning your grading or in general):					

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8.3. Indicate total savings, realized in the last 3 years, the percentage of bottom line-effective savings, and how certain you are about the validity of your indicated percentage:

	Total savings (€)	*Bottom line-effective savings (%)*	*Your certainty about your just indicated percentage on bottom line-effective savings* 100% (totally certain) – 0% (totally uncertain)
2005:	€	% of total savings	I am % certain of the indicated bottom line-effective savings for 2005.
2006:	€	% of total savings	I am % certain of the indicated bottom line-effective savings for 2006.
2007:	€	% of total savings	I am % certain of the indicated bottom line-effective savings for 2007.

8.4. If you feel that you are not 100% certain of your indicated bottom line-effective savings, please indicate to what extent the following facts lead to this circumstance in your company:

Please check one per line	Totally disagree	Somewhat disagree	Indifferent	Agree	Totally agree
Realized savings are spent by our internal customers for non-budgeted material.	☐	☐	☐	☐	☐
Our savings calculation is based on estimations.	☐	☐	☐	☐	☐
Our data base is intransparent and/or unreliable.	☐	☐	☐	☐	☐
Our measurement baselines are inconsistent.	☐	☐	☐	☐	☐
Our reference point for savings measurement is not always the previous year.	☐	☐	☐	☐	☐
We have no regular cross-functional information and knowledge exchange.	☐	☐	☐	☐	☐
Our company does not care about 100% certainty.	☐	☐	☐	☐	☐
Other:	☐	☐	☐	☐	☐

D. APPROACH TO MEASURING BOTTOM LINE IMPACT

9. Which activities should ideally be fulfilled by Purchasing and Supply Management in order to be able to report bottom line-effective savings in such a way that they are accepted internally as well as externally?

Please check one per line **In our company, Purchasing & Supply Management…**	Totally disagree	Somewhat disagree	Indifferent	Agree	Totally agree
…needs to define fixed measurement baselines prior to the measurement process.	☐	☐	☐	☐	☐
…needs to follow a standardized, aligned measurement process.	☐	☐	☐	☐	☐
…needs to be involved early on in budget planning processes.	☐	☐	☐	☐	☐
…needs to be involved early on in corporate strategic planning processes.	☐	☐	☐	☐	☐
…needs to align its sourcing strategy with the corporate/business unit strategy.	☐	☐	☐	☐	☐
…needs to conduct solid commodity planning.	☐	☐	☐	☐	☐
…needs to develop commodity strategies.	☐	☐	☐	☐	☐
…needs to operationalize commodity strategies through concrete activities.	☐	☐	☐	☐	☐
…needs to assign monetary savings potentials to each planned activity.	☐	☐	☐	☐	☐
…needs to track the realization of the planned activities.	☐	☐	☐	☐	☐
…needs to link reported savings transparently to the particular realized activities.	☐	☐	☐	☐	☐
…needs to attain cross-functional collaboration and information exchange.	☐	☐	☐	☐	☐
…needs to communicate and report supply performance objectively.	☐	☐	☐	☐	☐
Other:	☐	☐	☐	☐	☐
Comments:					

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10. To what extent does Purchasing and Supply Management in your company currently perform the following activities to measure its performance? To what extent will the respective process be changed in future?

	STATUS QUO					FUTURE				
In our company, Purchasing & Supply Management...	Totally disagree	Somewhat disagree	Indifferent	Agree	Totally agree	Totally disagree	Somewhat disagree	Indifferent	Agree	Totally agree
...defines fixed and standardized measurement baselines.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
...follows a standardized, aligned measurement process.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
...is involved in budget planning processes early on.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
...is involved in corporate strategic planning processes early on.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
...aligns its sourcing strategy with corporate/ business unit strategy.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
...conducts solid commodity planning.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
...develops commodity strategies.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
...operationalizes commodity strategies through concrete assigned activities.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
...assigns monetary saving potentials to each planned activity.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
...tracks the realization of the planned activities.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
...links the realized savings to the corresponding realized activity.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
...reports its savings to Management Accounting/ Controlling for testing savings' correctness.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Comments:										

11. To what extent has Purchasing and Supply Management currently established regular information exchange with the following departments? To what extent will communication with the respective department be changed in future?

		STATUS QUO					FUTURE				
	Function does not exist	Not at all	Slightly	Moderately	Substantially	Extensively	Not at all	Slightly	Moderately	Substantially	Extensively
Research & Development (R&D)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Engineering	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Production & Manufacturing	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Marketing/Sales	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Logistics	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Management Accounting/Controlling	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Human Resources (HR)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other internal customers:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

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12. To which level are the savings of Purchasing and Supply Management reported?

Please check one per line	Function does not exist	1x per year	2x per year	3x per year	4x per year	12x per year	Irregularly	Not reported
Published externally (e.g. Annual Report, Homepage, etc.)	☐	☐	☐	☐	☐	☐	☐	☐
Board of Directors	☐	☐	☐	☐	☐	☐	☐	☐
Executive Committee	☐	☐	☐	☐	☐	☐	☐	☐
Chief Procurement Officer (CPO)/Head of Purchasing	☐	☐	☐	☐	☐	☐	☐	☐
Chief Executive Officer (CEO)/Managing Director	☐	☐	☐	☐	☐	☐	☐	☐
Chief Financial Officer (CFO)/Head of Finance	☐	☐	☐	☐	☐	☐	☐	☐
Head of Business Unit/Head of Division	☐	☐	☐	☐	☐	☐	☐	☐
Senior purchasing executives	☐	☐	☐	☐	☐	☐	☐	☐
Only reported on the operating level	☐	☐	☐	☐	☐	☐	☐	☐
Other:	☐	☐	☐	☐	☐	☐	☐	☐

13. General statements or notes on your personal experience and/or opinion on the issue of measuring savings achieved by Purchasing and Supply Management and their contribution to the P&L:

_____

_____

_____

_____

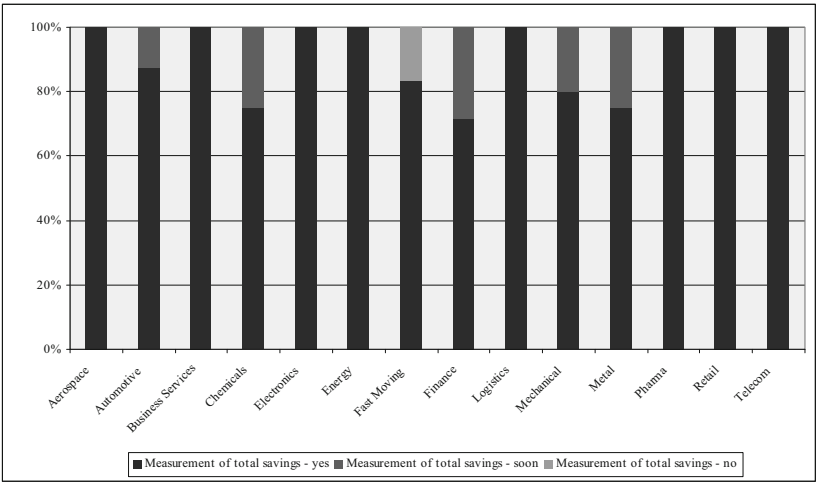
_____

NOTE: In order to obtain an even greater insight into your Supply Performance Measurement practices, we would be very grateful, if you attached your corporate Supply Performance Measurement guidelines, if available. They will be analyzed in an abstract manner only and exclusively used for this study. Your data will be treated absolutely anonymously and confidentially.

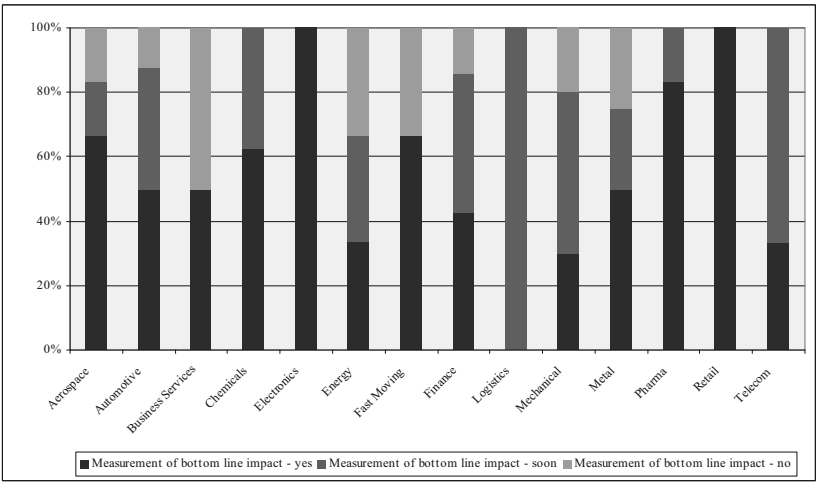
THANK YOU VERY MUCH FOR YOUR SUPPORT!

	Initial Mailing			Reminder			Total (%)	χ^2	Sig.
	Count	Expected Count	Total (%)	Count	Expected Count	Total (%)			
Industry								14.938	0.324
Aerospace & Defence	4.0	2.7	0.13	2.0	3.3	0.05	0.08		
Automotive	4.0	3.6	0.13	4.0	4.4	0.10	0.11		
Business Services	0.0	0.9	0.00	2.0	1.1	0.05	0.03		
Chemicals	5.0	3.6	0.16	3.0	4.4	0.08	0.11		
Electronics	0.0	1.8	0.00	4.0	2.2	0.10	0.06		
Energy	2.0	1.3	0.06	1.0	1.7	0.03	0.04		
Fast Moving Consumer Goods	1.0	2.7	0.03	5.0	3.3	0.13	0.08		
Financial Services	3.0	3.1	0.09	4.0	3.9	0.10	0.10		
Logistics	2.0	0.9	0.06	0.0	1.1	0.00	0.03		
Mechanical Engineering	5.0	4.4	0.16	5.0	5.6	0.13	0.14		
Metal Processing	2.0	1.8	0.06	2.0	2.2	0.05	0.06		
Pharmaceuticals	1.0	2.7	0.03	5.0	3.3	0.13	0.08		
Retail	2.0	1.3	0.06	1.0	1.7	0.03	0.04		
Telecommunications	1.0	1.3	0.03	2.0	1.7	0.05	0.04		
Total	**32.0**	**32.0**	**1.00**	**40.0**	**40.0**	**1.00**	**1.00**		
Purchasing Volume (m€)								3.780	0.607
< 100	5.0	4.1	0.16	4	4.9	0.11	0.13		
100 - 500	9.0	10.1	0.28	13	11.9	0.34	0.31		
501 - 1,000	5.0	5.5	0.16	7	6.5	0.18	0.17		
1,001 - 5,000	8.0	6.4	0.25	6	7.6	0.16	0.20		
5,001 - 10,000	1.0	2.7	0.03	5	3.3	0.13	0.09		
> 10,000	4.0	3.2	0.13	3.0	3.8	0.08	0.10		
Total	**32.0**	**32.0**	**1.00**	**38.0**	**38.0**	**1.00**	**1.00**		
Supply Management Employees								3.281	0.682
< 10	7.0	6.9	0.22	8.0	8.1	0.21	0.21		
10 - 50	8.0	8.2	0.25	10.0	9.8	0.26	0.26		
51 - 100	4.0	2.7	0.13	2.0	3.3	0.05	0.09		
101 - 500	7.0	8.7	0.22	12.0	10.3	0.32	0.27		
501 - 1,000	3.0	1.8	0.09	1.0	2.2	0.03	0.06		
> 1,000	3.0	3.7	0.09	5.0	4.3	0.13	0.11		
Total	**32.0**	**32.0**	**1.00**	**38.0**	**38.0**	**1.00**	**1.00**		

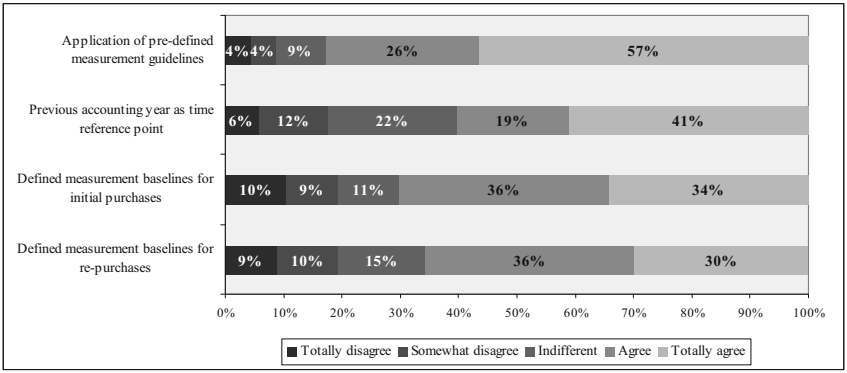
Appendix B: Survey – Non-response bias.



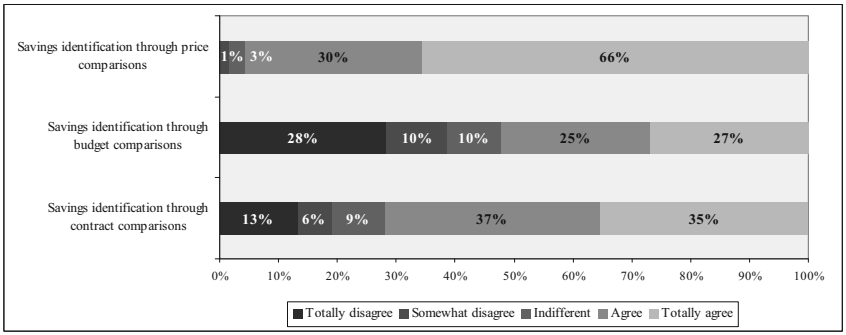
Appendix C: Industry-specific implementation of total savings measurement practices.



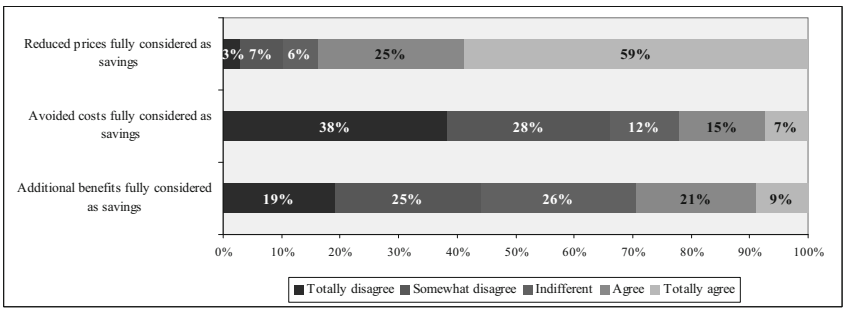
Appendix D: Industry-specific implementation of bottom line effective savings measurement practices.



Appendix E: Survey response pattern – Currently applied savings measurement basics.



Appendix F: Survey response pattern – Savings identification.



Appendix G: Survey response pattern – Savings definition.

Initiatives with direct price lever:

- Bundling
- Renegotiations
- Long-term contracts/framework agreements
- Public invitation to tender
- E-Procurement/E-Auction
- …

Initiatives with specification lever:

- Standardisation
- Specification change
- Substitution
- Innovation
- …

Initiatives with purchasing process lever:

- Change of suppliers
- Supplier consolidation
- Multiple sourcing/single sourcing
- Global Sourcing
- Supplier audits/certification
- Supplier partnership
- External sourcing cooperation
- …

Initiatives with demand lever:

- Change in stock keeping policy (TCO)
- …

Appendix H: Set of potential standard supply management savings initiatives.

Impact and Relevance

- Spend and strategic importance
- Corporate spread
- Actual projects
- Need to strengthen cooperation with internal customers

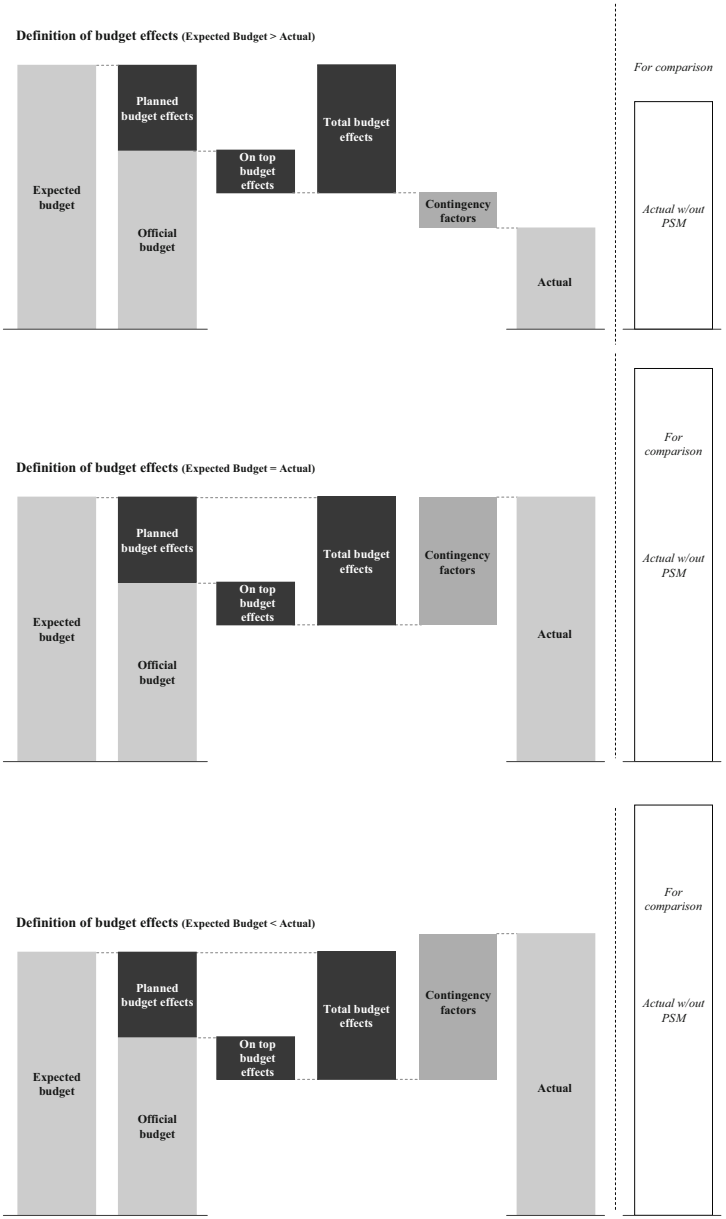
Complexity and Ease of Implementation

- Technology
- Specifications
- 'Translation tree' (translation of customer products to sourced products)
- (Documented) strategic sourcing capabilities and cross-functional acceptance

Flexibility and Influence

- Resources and time
- Contracts to be negotiated (vs. long-term contracts)
- Multi-source (vs. single-source)
- Internal customers owning a (quantified) planning and budgeting process

Appendix I: Selection criteria for pilot categories.



Appendix J: Three different budget effects scenarios in case of the occurrence of contingency factors.

Requirement Questionnaire		None 0	1	2	3	4	Complete 5	Irrelevant
Data completeness	Transparency on expected costs							
	Transparency on planned costs							
	Transparency on actual costs							
	Transparency on process costs							
	Managed spend transparency							
	Organisational cost transparency							
Open communication	Systematic information and knowledge exchange							
	Unbiased information and knowledge exchange							
	Continuous feedback- and forward							
Entrepreneurial spirit	One corporate objective							
	Corporate integration							
	Ambitious purchasing department							
Common measurement mindset	Savings transparency endorsement							
	Budgeting endorsement							
	Top management support							
Standardised process design	Standardised process design							
High data quality	High data quality							
Data transparency	Traceable data							
	Transparent data documentation							
Budget transparency	Process-oriented budgeting							
	Monitoring instance							
	Systematic and regular reporting							
Rational budgeting	Rational budgeting							
Process consistency	Same language							
	Aligned planning level							
	Tracking system alignment							

Appendix K: Focus Group questionnaire on measurement requirements.