



ProcuValue Value Creating Procurement

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The background features a dark blue gradient with vertical columns of glowing digital numbers in white and light blue. At the bottom, there are dynamic, curved light trails in orange and blue, suggesting motion and data flow.

ProcuValue

Value creating procurement

PROJECT REPORT

AKI JÄÄSKELÄINEN, JUSSI HEIKKILÄ & OTTO THITZ

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procurement

PROJECT REPORT

Tampere University of Technology
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Preface

This report summarizes the main results of the Value Creating Procurement (ProcuValue) project implemented in January 1, 2015– October 31, 2017 by the researchers of industrial management at Tampere University of Technology. The report is addressed to both academics and practitioners interested in the status and current developments of strategic purchasing and supply management (PSM) in Finnish companies.

The project began with a need to better understand complex, long-term purchasing and supply management (PSM) and to complement the current, somewhat transactional picture of PSM practices. It also sought to understand the capabilities of PSM to cope with the requirements of the contemporary business environment. The report overviews the key findings of the project regarding value creation through strategic PSM, characteristics of long-term purchasing, as well as models and practices for performance measurement in supplier relationships and cross-functional integration of the purchasing function. It also reports the key observations of case-specific development projects at four companies - Metsä Group, Posti, Tieto, and Valmet. Further, the report presents the main observations regarding suppliers' perceptions of capabilities and the status of customer-supplier relationship practices based on more the 600 survey responses.

The project could not have been successfully implemented without the valuable efforts by research assistants Anna Hiidensalo, Juho Hirn, Topi Järvensivu, and Jaakko Tyynismaa, who also prepared their M.Sc. theses on the project. The authors gratefully acknowledge the financial support from the Finnish Funding Agency for Innovation (Tekes) and the companies participating in the project. The authors also greatly appreciate the efforts and valuable contributions by the employees of the case companies, which were important in achieving the objectives of the project.

Tampere October 2017

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Summary

This project addressed the shift in purchasing from a “classical purchasing philosophy” reflecting a transaction-oriented approach to a “modern purchasing philosophy” highlighting longer supplier relationships and a strategic approach in managing supplies and the purchasing function. The current understanding of modern purchasing is limited and it is notably difficult to put the new ideas highlighting long-term value creation into practice.

The aim of the project was to create new and widely applicable knowledge for managing strategic purchasing and supply management. It examined the viewpoints of both buyer and supplier. More specifically, this project investigated 1) the benefits of long-term purchasing, 2) the strategic capabilities of the purchasing function, 3) models, practices, and performance measures for modern purchasing and supply management (PSM), and 4) supplier capabilities and the supplier-buyer relationship characteristics.

This project had four case companies: Metsä Group, Posti Group Corporation, Tieto Oyj, and Valmet Corporation. All these companies are large multi-national companies operating in the business-to-business markets. The case companies represent the viewpoint of a buyer. The project started with a purchasing maturity analysis, which was carried out by a survey addressed to the case companies. It continued with an interview study, which paid more attention to specific aspects in purchasing: value creation, long-term orientation, and performance management. A supplier survey was conducted in the latter part of the study and addressed to more than 600 suppliers of the case companies. In addition, each of the cases had their own development projects with their respective objectives, schedules and methods.

Different characteristics of long-term purchasing were identified, such as purchasing strategies highlighting close supplier partnerships, strategic technology choices, and purchasing related to long-term investments. A long-term approach to purchasing was found to offer benefits such as the utilization of supplier expertise and increased attractiveness among suppliers. The identified strengths of the purchasing functions studied were the skills of purchasing professionals to ensure the availability of purchased goods and services, the existence of a long-term purchasing strategy, documentation of a purchasing process, a link between purchasing and company strategy, and an awareness of the importance of purchasing in contributing to cost competitiveness. The most common development areas of purchasing included cross-functional integration between purchasing function and other functions such as product development, involvement of suppliers in product development, bundling of the supplies, and using and communicating of supplier evaluations.

New models, practices and performance measures for contemporary purchasing and supply management were developed in the course of this study. In the case company

Valmet, a new design-to-cost framework was developed in order to improve cross-functional and inter-organizational collaboration in product development. At Posti, an approach for measuring supplier partnerships was designed. In the case of Metsä Group, a framework for measuring supplier quality was developed. At Tieto, the idea of combining data from different functions was successfully presented and tested. The analysis of *supplier capabilities and supplier-buyer relationship characteristics* revealed that a foundation for a good buyer-supplier relationship does indeed exist. Suppliers appear to be capable when offering and implementing their solutions. However, integration between supplier and buyer frequently remains rather superficial. For example, true collaboration in product development is rare.

Several avenues for future research in the field of PSM can be identified. There remains a need to better understand the benefits of long-term purchasing in terms of financial numbers as well as the mechanisms for creating the benefits. Further, there is a need to better understand when to search for long and close supplier relationships. Supplier satisfaction is a rising topic requiring more attention since buyer companies are increasingly competing for the most capable suppliers. Digitalization in purchasing and supply management is a topic gaining increasing attention and requiring more research in the future. There has already been lot of work in automating and digitalizing purchases. This project revealed a topical need for digital supplier portals, which centralize all the supplier information (e.g. costs, contracts, supplier offerings and their use in different business).

Tiivistelmä

Tämä projekti tarkasteli hankinnan muutosta klassisesta, yritysten välisiä transaktioita korostavasta hankinnasta moderniin hankintaan, jossa korostuvat pitkäaikaiset toimittajasuhteet ja strateginen lähestymistapa toimittajien ja hankintafunktion johtamiseen. Ymmärrys modernista hankinnasta on yhä rajoittunutta ja haastavimmaksi asiaksi on muodostunut uusien, pitkän aikavälin arvonluontia korostavien mallien ja ratkaisuiden vieminen käytäntöön.

Projektin tavoitteena oli kehittää uutta ja laajasti sovellettavaa tietoa strategisesta hankinnasta ja toimitusketjun hallinnasta. Siinä tarkasteltiin sekä ostajan että toimittajan näkökulmia. Tarkemmat näkökulmat projektille olivat: 1) strategisen hankinnan hyödyt, 2) hankintafunktion strategiset kyvykkyydet, 3) modernia hankintaa ja toimitusketjun hallintaa tukevat mallit, käytännöt ja mittarit sekä 4) toimittajakyvykkyydet ja toimittaja-ostajasuhteen piirteet.

Tällä projektilla oli neljä case-tutkimuskohdetta: Metsä Group, Posti Group Oyj, Tieto Oyj ja Valmet Oyj. Kaikki yritykset ovat suuria kansainvälisiä yrityksiä, jotka toimivat yritysten välisillä markkinoilla. Case-yritykset edustivat ostajan näkökulmaa. Projekti käynnistyi hankinnan maturiteettianalyysillä, joka toteutettiin case-yrityksille suunnatulla kyselyllä. Projekti jatkui haastattelututkimuksella, jossa kiinnitettiin huomiota hankinnan arvonluontiin, pitkävaikutteisuuteen ja suorituskyvyn mittaamiseen. Projektin loppupuoliskolla toteutettiin toimittajakysely, johon vastasi yli 600 case-yritysten toimittajaa. Lisäksi jokaisessa case-yrityksessä toteutettiin oma kehitysprojekti, jolla oli omat tavoitteet, aikataulu ja menetelmät.

Eräs projektin avainkäsite oli *pitkävaikutteiset hankinnat*, jonka havaittiin tarkoittavan monia eri asioita kuten läheisiä toimittajakumppanuuksia korostavaa hankintastrategiaa, strategisia teknologiavalintoja ja investointihankintoja. Pitkävaikutteisuuksilla nähtiin monia hyötyjä kuten toimittajakyvykkyyksien hyödyntäminen ja ostajan lisääntynyt houkuttelevuus toimittajien keskuudessa. *Tutkittujen yritysten hankintafunktioiden vahvuuksiksi* tunnistettiin ammattitaito ajantasaisen toimistusten varmistamisessa, pitkän aikavälin hankintastrategian olemassaolo, hankintaprosessin dokumentointi, hankinnan ja yritysstrategian välinen yhteys sekä ymmärrys hankinnan roolista kustannuskilpailukyvyyn luomisessa. Yleisimmät kehityskohdet puolestaan liittyivät hankintafunktion ja muiden funktioiden (esim. tuotekehitys, markkinointi) väliseen yhteistyöhön, toimittajien osallistamiseen tuotekehitykseen, toimitusten yhdistelemiseen suuremmiksi kokonaisuuksiksi sekä toimittaja-arviointien käyttöön ja arviointitulosten kommunikointiin.

Projektissa kehitettiin *nykyaikaisen hankinnan ja toimitusketjun hallinnan edellyttämiä malleja, käytäntöjä ja mittareita*. Valmetin tapauksessa kehitettiin uudenlainen design-to-cost viitekehys sekä yrityksen sisäisten funktioiden että yritysten välisen

yhteistyön edistämiseen tuotekehityksessä. Postilla kehitettiin lähestymistapa toimittajakumppanuuksien hyötyjen ja riskien mittaamiseen. Metsä Groupilla kehitettiin toimittajan tarjoamien palveluiden laadun viitekehys sekä subjektiivinen mittari laadun arvioimiseen. Tiedolla testattiin analyysilähestymistapaa, jossa yhdistellään hankinnan ja liiketoimintafunktioiden välistä dataa. *Toimittajakyvyyksien ja toimittaja-ostajasuhteiden* piirteiden analyysi paljasti, että perusedellytykset hyvälle yhteistyölle ovat olemassa. Toisaalta kuitenkin integraatio toimittajien ja ostajien välillä on silti usein varsin pinnallista ja esimerkiksi tuotekehityksessä tapahtuu yhteistyötä vain harvoin.

Projekti avasi useita suuntia jatkotutkimukselle. On edelleen tarve ymmärtää paremmin pitkää aikaväliä ja pitkä toimittajasuhteita korostavan hankinnan hyötyjä, jotta ymmärretään paremmin niitä mekanismeja ja hankinnan käytäntöjä, jotka edesauttavat kyseisiä hyötyjä. Tutkimusta tarvitaan lisää, jotta voidaan ymmärtää paremmin milloin läheiset toimittajasuhteet kannattavat. Toimittajatytyväisyys on teema, joka merkitys kasvaa yritysten kilpaillessa parhaista ja kyvykkäistä toimittajista. Digitalisaatio on jo saanut lisääntyvää huomiota hankinnan ja toimitusketjun hallinnan alueella. Käynnissä on paljon työtä hankintojen automatisoinniksi ja digitalisoinniksi. Tässä projektissa tunnistettiin ajankohtaisia tarpeita liittyen digitaalisiin toimittajaportaaleihin, jotka keskittävät kaiken toimittajatiedon kuten kustannukset, sopimukset ja toimittajatarjoamat.

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1

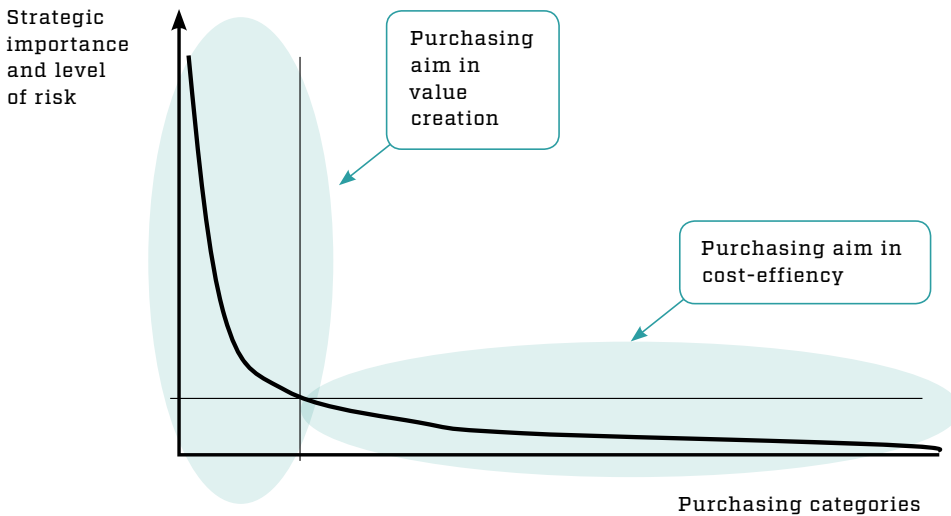
Introduction

The economic significance of purchasing and supply management (PSM) is constantly growing due to lowered barriers to international trade, improvements in information availability and environmental concerns. A successful purchasing function has a positive effect on the companies' financial performance (Chen et al., 2004) and PSM is acknowledged to be an important contributor to companies' strategic success (Cousins et al., 2008). However, purchasing is still often seen as a support function and its success is measured in terms of its ability to cut costs (Axelsson et al., 2002). This may lead to detrimental short-term purchasing strategies.

The background for this project was in the identified shift in purchasing from the "classical purchasing philosophy" reflecting a transaction-oriented approach to purchases and supplier relationships to a "modern purchasing philosophy" (see e.g. Axelsson et al., 2002) paying attention to longer supplier relationships and a strategic approach to managing supplies and the purchasing function. Whereas the modern philosophy is desired by many companies, it has proven difficult to implement in practice. It is difficult to demonstrate the benefits of such an approach since they often only emerge over a longer time period and consist of non-financial and intangible elements. It may be difficult to decide when to pursue closer supplier collaboration and when to take the transaction-oriented approach. Further, the managerial practices and models for PSM differ when different philosophies are used.

Figure 1 illustrates the two possible focuses of purchasing, the first of which highlights classical purchasing and the second a more strategic approach to purchasing highlighting value creation. Most purchasing categories aim at cost-efficiency and the time-scale is often rather short. Competitive bidding, continuous supplier changes, process standardization, and automation are the prevailing and successful managerial practices. These categories are typically controlled by the purchasing function.

FIGURE 1. TWO PERSPECTIVES ON PURCHASING



In the purchasing approach aiming at value creation, the strategic importance of suppliers is greater and suppliers affect the operations in their customer companies. Examples of such purchases relate to R&D, ICT, and other complex services and investments. The risks and dependability of single providers is greater from the perspective of the purchaser. Such purchasing categories are typically managed in cooperation between the purchasing function and other key functions (e.g. R&D) of an organization.

The aim of this research project was to create new and widely applicable knowledge for managing strategic purchasing and supply management. It examined the viewpoints of both buyer and supplier. More specifically this project investigated:

- The benefits of long-term purchasing
- The strategic capabilities of the purchasing function
- Models, practices, and performance measures for modern PSM
- Supplier capabilities and supplier-buyer relationship characteristics

The approach to the research was sequential. The study started by investigating the capabilities of the purchasing function, continued with different models and practices for improving the PSM and advanced to supplier capabilities and relationship characteristics at the end of the project.

This report is structured as follows. Section 2 describes the implementation of the project in more detail. Section 3 provides an overview of the findings on value created by purchasing, section 4 presents the results of two of the case studies (Valmet, Tieto) in which cross-functional integration of purchasing was highlighted. Section 5 concentrates on performance measurement in purchasing, which was highlighted in the two other cases (Posti, Metsä Group). Section 6 overviews the main results of the supplier survey by presenting the status of supplier capabilities and supplier-buyer relationship characteristics. Section 7 presents the concluding remarks.

2

Project implementation

2.1. Participating companies

This project had four case companies: Posti, Tieto, Valmet and Metsä Group. All the companies are large multi-national companies (revenue over 1 billion euros; over 10,000 employees) operating in the business-to-business markets. The case companies represent the viewpoint of a buyer. Selected suppliers of these companies also participated in this study. For the purposes of this study, the case companies were classified to represent more service or manufacturing oriented operations as well as more project or continuous production. Table 1 provides an overview of the cases, which are elaborated below.

TABLE 1. THE CASE COMPANIES OF THIS STUDY

Company	Posti	Tieto	Valmet	Metsä Group
Industry	Services (logistics)	Services (information and communication technology)	Manufacturing (machinery)	Manufacturing (forest industry)
Type of production	Process	Project	Project	Process
Share of purchased materials/service	10% materials, 90% services	30% materials, 70% services	72% materials, 28% services	60% materials, 40% services

Posti (Posti, 2017) operates in postal, logistics, and e-commerce services. It has operations in ten countries, most of the revenue is generated in Finland, Scandinavia, and Russia. Business customers account for approximately 96% of net sales. Key customer industries include the media as well as the trade and services industries. The company's annual revenue exceeds €1,500 million and it employs over 20,000 people. Posti Group is owned by the state of Finland¹.

Tieto (Tieto, 2017) is in the ICT industry and helps its customers renew their businesses by capturing the opportunities of modernization, digitalization and innovation and to foster new opportunities. It has a global purchasing organization but its main business area is Northern Europe. Tieto's turnover is around € 1,500 Million and it has around 14,000 employees².

Valmet (Valmet, 2017) is a global project manufacturing company, which develops and supplies technologies, automation, and services for the pulp, paper, and energy industries. Valmet has around 12,000 employees and its revenue in 2016 was approximately €2,900 million³.

Metsä Group (Metsä Group, 2017) is a Finnish forest industry company operating in 30 countries. Metsä Group's business operations cover the entire value chain for wood. The company focuses on tissue and cooking papers, paperboard, pulp, wood products, and wood supply and forest services. Its annual sales amount to €5,000 million Euros and it has approximately 9,600 employees⁴.

2.2 Phases of the project

Figure 2 illustrates the main phases of this project. The schedule includes the phases of data gathering and analysis. The project started with a purchasing maturity analysis, which was carried out by a survey addressed to the case companies. It continued with an interview study, which paid more attention to specific aspects of purchasing: value creation, long-term orientation, and performance management. A supplier survey was conducted in the latter part of the study and addressed to more than 600 of the case companies' suppliers. The respective case studies had their own specific objectives, schedules, and methods.

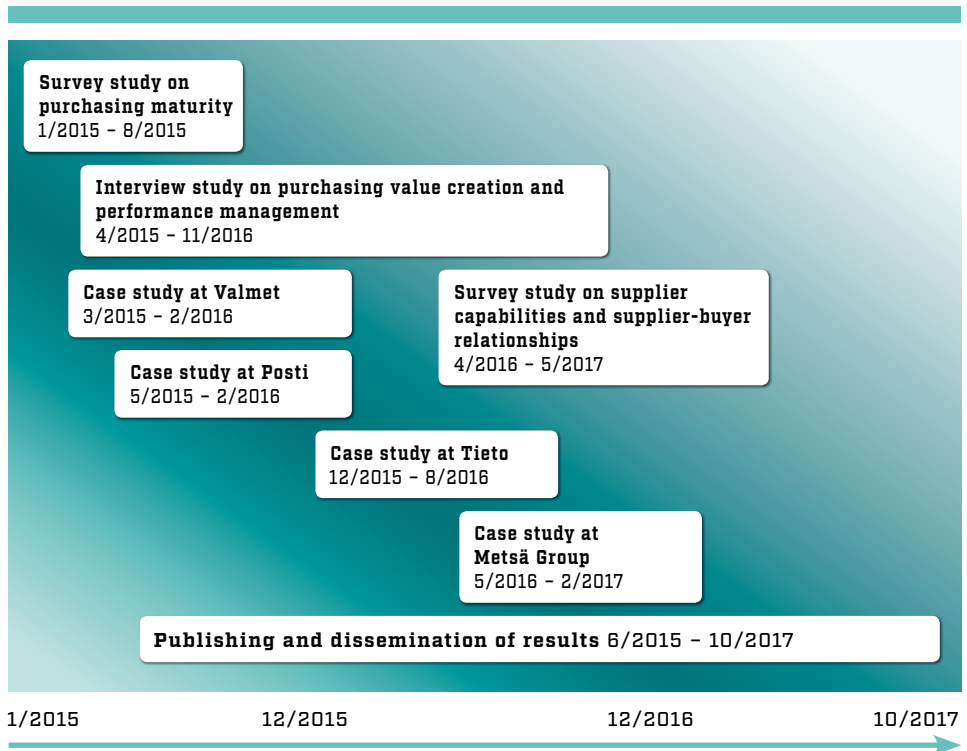
1 More information on Posti purchasing: <https://www.posti.com/en/contact-us/sourcing/>

2 More information on Tieto's suppliers: <https://www.tieto.com/about-us/contact-us/suppliers>

3 More information on Valmet purchasing: <http://www.valmet.com/about-us/procurement/>

4 More information on Metsä Group purchasing: <http://www.metsagroup.com/en/Contact/purchasing/Pages/default.aspx>

FIGURE 2. OVERALL SCHEDULE AND WORK PACKAGES OF THE RESEARCH PROJECT



2.2.1. Purchasing maturity

The purchasing maturity survey was directed to the case companies' personnel responsible for purchasing and other functions collaborating with it. The survey was built iteratively based on existing purchasing maturity models in the literature (Chen et al., 2004; Cousins et al., 2006; Schiele, 2007; Paulraj et al., 2006). These papers were studied in detail and potential questions and statements were extracted from them. Furthermore, a performance measurement and management maturity model (Jääskeläinen and Roitto, 2015) was utilized in formulating the statements for the performance management section of the survey. The purchasing maturity survey had six themes:

- The role of the purchasing function
- The purchasing strategy
- Human resource management in purchasing
- The purchasing process
- Supplier network management
- Purchasing performance management

These sections together contained 64 statements (see Appendix 1). Due to the limited number of respondents (25) in this study, the results are not presented in this report (see Jääskeläinen et al. 2015 for the results). The results of this phase were used to develop a more detailed structure for the interview. In addition, the tool itself will be useful in future research and development work on purchasing maturity.

2.2.2. Interview study on purchasing value creation and performance management

The results of the purchasing maturity survey were used to design an interview study, where not only purchasing maturity but more specifically the content of value created by purchasing, practices for creating value, characteristics of long-term purchasing, and performance management practices were investigated. The interview structure covered roughly the same thematic areas as the survey but the purchasing process section was omitted since it represents the operative side of PSM.

Each of the four companies proposed 8-12 potential interviewees and finally eight interviews per case company were conducted (see Table 2). The interviewees represented both the purchasing function and its partner functions such as R&D, production, and sales. The empirical data was gathered in two phases: in spring 2015 (24 interviews) and in fall 2016 (8 interviews). The second phase was conducted to achieve a more profound understanding of the value created by the purchasing function for the customer. The second-phase informants represented product/service development and the sales and marketing functions. All the interviews lasted about an hour and they were audio-recorded and transcribed verbatim.

TABLE 2. INTERVIEWEES IN THE CASE COMPANIES

Company	Posti	Tieto	Valmet	Metsä Group
Interviewees	2 purchasing directors 3 category managers 1 operations manager 1 product and service manager 1 account manager	2 purchasing directors 1 category manager 1 operations director 1 ICT director 1 finance manager 1 customer executive 1 service director	2 purchasing directors 1 purchasing manager 1 category manager 1 operations director 1 R&D director 2 key account managers	2 purchasing directors 2 category managers 1 finance director 1 operations director 2 product development managers

2.2.3. Case studies

Interviews were the starting point of each case study; they were used to obtain a pre-understanding of the development issues at hand. Interviews were tailored to the case-specific development needs such as the benefits of supplier collaboration in Posti and service quality in Metsä Group. Many of the case studies had the characteristics of an action research consisting of workshops attended by researchers and company representatives. The action research included observation and documentation of the development projects in each case company. In addition, analysis of quantitative data in the form of ERP (Tieto) and survey data (Metsä Group) were used. Table 3 summarizes the main objective in each of the cases, the research methods used and the informants.

TABLE 3. CASE STUDIES AND THEIR EMPIRICAL METHODS

Company	Valmet	Metsä Group	Posti	Tieto
Objective	Cross-functional integration and supplier participation in product development	Service supplier quality measurement	Measurement for demonstrating the benefits of supplier partnerships	Cross-functional integration supported by data
Research methods	15 interviews representing case company One workshop for representatives of suppliers, Valmet, and its customer One workshop for the representatives of Valmet	10 interviews (eight representing the case company and two its service supplier) Development and piloting of a quality evaluation survey for both buyer and supplier	Five interviews with case company representatives three workshops to design a new measurement approach	11 interviews for case company representatives Piloting of a proposed measurement approach through analysis of performance information
Informants	One supply chain director Four purchasing managers Two purchasing category managers Two product development directors (one from engineering, one from technology) Four product development managers Two production directors (of two different business lines)	Eight interviewees from the case company: managers and directors representing production units and purchasing function Two interviewees from the supplier company: business director, quality manager	Interviewees and workshop participants were managers and directors representing purchasing function and purchasing function's internal customers from the business lines	Interviewees included managers and experts from purchasing, analyst positions, and business unit managers.

Suppliers participated in the case studies in Valmet and Metsä Group. At Valmet one customer and two suppliers attended one of the workshops. The customer was a Finnish process industry company operating in international markets. The offerings consisted mainly of physical products sold on to other companies or directly to consumers. Supplier A was a global technology provider company. The offerings consisted of products and technologies related to rotating equipment. Supplier B was a global company in the engineering industry providing tailored power industry-specific solutions. At Metsä Group the supplier of cleaning services participated in the pre-study interviews and the survey conducted.

2.2.4. Supplier capability survey

Supplier capabilities and supplier-buyer relationship characteristics were studied through a survey directed to the case companies' suppliers. The survey instrument (see Appendix 2) was developed based on an extensive review of the literature on purchasing and supply management, industrial marketing management, performance management, and management control. This time, the survey had four larger thematic areas divided into sub-categories:

- The collaborative process
 - communication, understanding of customer needs, the process for offering and implementing solutions for the customer and operational payment terms.
- The characteristics of the supplier-customer relationship
 - culture and management style, trust, equality, sharing of profits and risks, supplier's integration into customer's business and expectations of continuity.
- Performance management and sharing measurement information.
 - provision of measurement information, customer's supplier evaluation, shared goals and measurement.
- Supplier performance and relational value creation
 - supplier's performance compared to other firms in that same industry, supplier's reputation and relational value creation of the supplier together with customer company.

The questionnaire was implemented as a web-based survey administered by the authors. The survey was open for three weeks in May-June 2016. The scale for answers was from 1 to 7 (Strongly disagree – Strongly agree). The questionnaire was sent to 1,630 suppliers and 662 eligible responses were received resulting in a response rate of 40.6%. The respondents to the survey were suppliers' contact persons in a relationship with a specific customer. Hence, there was typically only one response per supplier. Table 4 summarizes the background information of the respondents.

TABLE 4. DEMOGRAPHIC INFORMATION ON THE RESPONDENTS' COMPANIES OF THE SUPPLIER CAPABILITY SURVEY

Sample size	662
Company size in annual revenue 2015	Less than 2 million Euros 19.0%; 2 million - less than 10 million Euros 22.5%; 10 million - less than 50 million Euros 23.0%; 50 million - less than 100 million Euros 7.3%; 100 million - 500 million Euros 10.3%; Over 500 million Euros 16.0%;
Company size in employee count 2015	Under 10 persons 15.4%; 10-19 persons 11.6%; 20-49 persons 15.0%; 50-99 persons 11.0%; 100-249 persons 13.9%; 250-499 persons 5.9%; 500 persons or more 26.4%
Respondent's area of responsibility	CEO/Senior management 41.5%, Key Account Management 29.3%; Sales 21.3%; Other 7.9%
Length of supplier-customer relationship	Less than 1 year 0.8%; 1 year - less than 3 years 6.2%; 3 years - less than 5 years 10.7%; 5 years - less than 10 years 15.7%; 10 years - 20 years 31.6%; More than 20 years 34.0%;
Key supplier status	Key suppliers 28.7%; Other suppliers 71.3%

3

The role of purchasing in value creation

3.1. Components of non-financial value

We used the framework by Ulaga and Eggert (2006) to classify the value created by purchasing. Only non-financial benefits were included since much is already known about the financial aspects. The framework differentiates the following aspects of value: product quality, delivery performance, service support by the purchasing, personal interaction in supplies and know-how. Sustainability was mentioned as an important part of value and included in the analysis.

Table 5. summarizes the key results. It describes the perceptions of components of non-financial value created by the purchasing function considering both collaboration between functions within the company and with immediate B-B customers. The context of the empirical observations is likewise described in the table whenever a specific context can be identified: S= service, M = Manufacturing, Project business = Project, Continuous production = Process. If an observation was found in two companies, only the conjunctive characteristic is mentioned.

TABLE 5. SUMMARY OF RESEARCH RESULTS IN RELATION TO THE RESEARCH FRAMEWORK

Perspectives of the research framework	Internal value created	Customer value created
Product quality	<p>Ensuring the fulfillment of supplier service levels (S, Project)</p> <p>Assurance of quality of production materials, parts and services (M)</p>	<p>Avoidance of quality problems (Process)</p> <p>Ensuring fulfillment of the customer's quality criteria (Project)</p> <p>Provision of coherent customer service (despite many suppliers) to improve customer experience (S, Project)</p>
Delivery performance	<p>Choosing suppliers to meet the requirements of on-time delivery (Project)</p> <p>Complete deliveries (S, Project)</p> <p>Ensuring availability of raw materials (M, Process)</p> <p>Flexibility of supplier deliveries</p>	<p>Avoidance of delivery performance problems (M, Process)</p> <p>Ensuring flexible delivery to the customer (S)</p>
Service support	<p>Provision of an efficient purchasing process to support other functions</p>	<p>Scanning of business demands and identification of optimal solutions for the customer</p>
Personal interaction	<p>Cross-functional interaction for the identification of synergies</p>	<p>Provision of supplier contacts to support product development for specific customer needs (M, Process)</p>
Know-how	<p>Increased know-how on supply markets (M)</p> <p>Utilization of suppliers' know-how (S, Process)</p>	<p>Results do not indicate benefits directly useful for customers</p>
Time to market	<p>No answers</p>	<p>Improving time-to-market of both own and customer products through identification of suitable supplier partners (Project)</p>
Sustainability	<p>No answers</p>	<p>Meeting sustainability criteria determined by customers (M, Project)</p>

Observations characterizing transactional exchange were prominent. Product/service quality was often mentioned as an indispensable characteristic which should not be compromised by cost-cutting. Our study identified many different approaches to flexibility of supply. Flexibility assumed both the more traditional form, where it relates to capacity management issues, but it was also linked to product/service specifications reflecting varying customer expectations.

Purchasing service support was related to connecting business demands with the supplier offerings and an effective purchasing process. Interaction both cross-functionally and between organizations was seen to form part of purchasing value creation, but it was generally not emphasized when customer value was discussed. Knowledge was typically linked to the contribution of the purchasing function to raising the level of knowledge of the other functions about suppliers and the supply market.

This study utilized the same framework for analyzing both the internal value of the purchasing function and the function's contribution to customer value. It appears that aspects related to delivery performance, and especially to flexibility, were emphasized more when contemplating internal value. The respondents did not acknowledge these aspects in the same way as from the point of view of customer value. Examination of internal value showed that the interaction between the purchasing function and the other key functions, such as marketing and R&D, was highlighted. In the case of customer value, the discussion was characterized by emphasis on the role of the purchasing function as an intermediary between customers and suppliers. For example, the role of the purchasing function in tailoring offerings for customers was mentioned, likewise that of the purchasing function in monitoring quality, and communicating customer complaints to the suppliers. Hence, the results regarding customer value reflected more the aspects of relationship value, whereas the perceptions of internal value reflected the aspects of transactional value.

The discussion on customer value included the importance of sustainability. Several interviewees in each of the companies studied highlighted the role of the purchasing function in these aspects. Customers were seen to be increasingly aware of ethical, environmental, and safety issues. Even smaller problems with sustainability may cause the company severe image issues. In addition, customer communication was increasingly seen to require attention to the sustainability of purchases.

3.2. Long-term orientation and contextual characteristics

The long-term orientation of purchasing was studied by examining how the interviewees perceived value creation in the long-term. Clear contextual differences between the companies were identified. Table 6 summarizes the main findings for each of the four companies.

TABLE 6. LONG-TERM ORIENTATION TO PURCHASING IN THE CASE COMPANIES

Perspective on long-term purchasing orientation	Posti	Tieto	Valmet	Metsä Group
Longest time-frame to decision-making	5-20 years	1-5 years, over 10 years for data centers	9 months to 5 years	Plant life-cycle, from 15 to 40 years, even longer
Perceived approach to long-term purchasing	Supplier partnerships	Technology choices	Long-term supplier collaboration with selected suppliers	Investments
Description of purchasing with long time-frame	Partnerships with suppliers related to strategically important areas	Technology choices for software platform licenses and data centers	Projects are typically the longest examination period with few exceptions	New production investments and equipment, major upgrades
Perceived value components of long-term purchasing	Utilization of supplier expertise, increased attractiveness among suppliers, decreased risks related to business ethics, optimized quality	Not identified	Capable suppliers	Improved efficiency of processes, development of new products

Supplier partnerships were a topical theme for Posti and highlighted in the purchasing strategy by the intention to increase the share of partner suppliers. Four types of value components were related to supplier partnerships. First, utilization of supplier expertise was deemed an important benefit of partnerships and a reason for promoting them. Second, wide agreement prevailed on partnerships making Posti a more desirable customer to suppliers. This in turn could lower the bar to providing innovations and new offerings. Third, purchasing employees especially highlighted that partnerships could decrease the risks related to business ethics since the suppliers are better known. Fourth, quality optimization ('right level of quality', i.e., not too high and not too low) from the perspective of the customer was regarded as an important benefit of partnerships by both business and purchasing respondents. In partnerships the objec-

tive of optimizing quality could be shared with the partner and joint means to reach the target could be defined.

Interviewees in Tieto related long-term purchasing to software platform licenses, data centers, and data transfer contracts. A purchasing director representing indirect purchases said that there were few long-term investments, data centers being notable examples. Three interviewees mentioned technological choices as a major incentive towards strategic partnerships with suppliers and consequently to long-term approach to purchasing. In Tieto, purchasing and supplier relationships over a longer time period were essentially seen as a necessary evil and no clear value components were mentioned. Technological choices cause technology lock-ins linked to single suppliers.

In Valmet questions regarding purchasing with long-term effects revealed that a longer time perspective in purchasing was not a daily issue. It was found that the company purchased some solutions (such as subassemblies of larger machines) as a part of a long-term plan.

In Metsä Group investments were widely mentioned as a form of long-term purchasing. The time frame for investments was described as long, starting from 15 years up to 50 years. Investments have an effect on the company's profitability in the long-term by affecting the efficiency of the existing processes or the development of new products. Benefits of successful investment purchases were related to reliability, product and service quality, supplier collaboration, and price level.

Overall, the results suggest that a long-term purchasing orientation may assume many different forms in the four case companies. Posti and Metsä Group operating in process-type industries seemed to have considerably longer time-frames for looking at the long-term effects of purchasing when compared to Tieto and Valmet in the project-type of businesses. In addition to the benefits of a longer time horizon in planning purchasing activities, all the companies clearly acknowledged and highlighted the risks involved, especially in the form of supplier lock-ins.

The contextual characteristics of value creation by purchasing was also analyzed (Table 7). Since the observations are only from single empirical settings they should be regarded as proposals and requiring further verification. A general observation was that process production companies emphasized more the role of the purchasing function in successful deliveries (i.e. transactional value), whereas in project production there was more discussion on aspects of relationship value. In addition, customer value was discussed more in the project companies than in the process production companies. Similarly, the ability to respond to market (or customer) demands was identified as the most important manifestation of flexibility in project production companies, whereas capacity flexibility of suppliers was more in focus in the process-type production. Another noteworthy observation in the project-type of production was the value created by the purchasing function through attending to the development of new product-service offerings, which may reflect the requirements of customers.

TABLE 7. KEY OBSERVATIONS ON THE CONTEXTUAL CHARACTERISTICS IN PURCHASING VALUE CREATION

Contextual characteristics studied	Observed impact on value creation
Process orientation in production	Transactional approach to value creation Capacity flexibility is highlighted The time-frame for the effects of the purchasing activities may be long
Project orientation in production	Relationship-oriented approach to value creation Ability to respond to changing market (or customer) demands is highlighted Ability of the purchasing function to attend to the development of customer offerings is regarded as important Customer value is considered as important The time-frame for the effects of the purchasing activities is typically limited to the duration of the project
Long-term orientation to purchasing	Value in the form of supplier knowledge is highly appreciated in long-term oriented purchasing practices (e.g. attendance to strategically important project/service development) Longer supplier relationships can be beneficial to sustainability targets

The temporal perspective on purchasing practices was shorter in the project companies than in the process production companies. This observation may also reflect the supplier market characteristics in the case companies studied.

The value emphasized in long-term oriented purchasing practices was related especially to the utilization of supplier knowledge in order to achieve more competitive offerings and incorporate supplier knowledge into product development. In addition, sustainability objectives were one driving force for longer term supplier relationships.

4

Purchasing as a cross-functional and inter-organizational integrator

4.1. Design-to-cost approach to involving suppliers in product development - Case Valmet

The importance of inter-organizational collaboration in the product development of Valmet was a starting point for the case study. Most of the purchasing employees considered that the early involvement of suppliers in product development projects is valuable, especially when the focus of the development project is not merely on the case company's own technology and there is a need for an extrinsic resource. The aim was to better understand how to involve different actors in product development. The initiation of product development ideas especially was seen as a major challenge. The case study concentrated on the development of a framework for involving suppliers and customers in the product development of Valmet by adopting the concept of Design-to-Cost (DTC) in project manufacturing.

DTC is a concept and approach presented in the 1980s which aims to decrease manufacturing costs through product re-design. Target costing is a similar concept in which the price level approved by markets directs the cost structure and design of products. Both target costing and DTC were originally developed for the purposes of automated

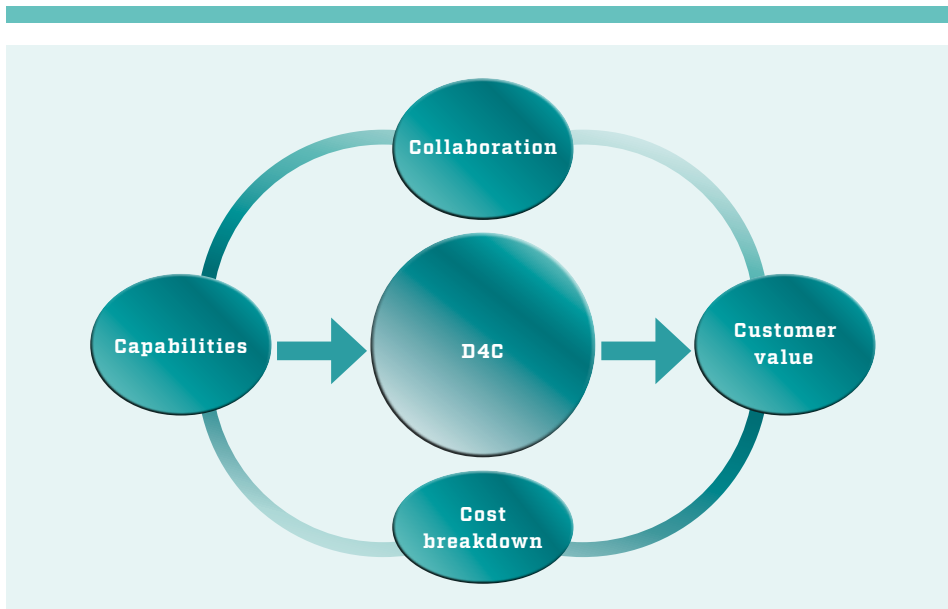
mass production. The reported implementations have highlighted the identification of detailed cost components and cost accounting.

In the case company Valmet, an updated version of DTC framework was developed in order to respond to the specific needs of project manufacturing. In this context, specific attention is needed in order to ensure sufficient communication between suppliers, the buyer, and its customers. Instead of a routine process, DTC should offer support for deliveries tailored for customers. The role of the purchasing function as a facilitator of collaboration between companies is highlighted in the model developed.

The development work started with a literature review of DTC, target costing, product development, cross-functional teams, and decision-making. As a result, the factors necessary in the DTC framework were identified. The proposed draft of the DTC framework was further developed with the results of 14 semi-structured interviews and two workshops. The workshop attended by two suppliers and a customer was deemed especially fruitful since different parties were able to share their thoughts at a single event.

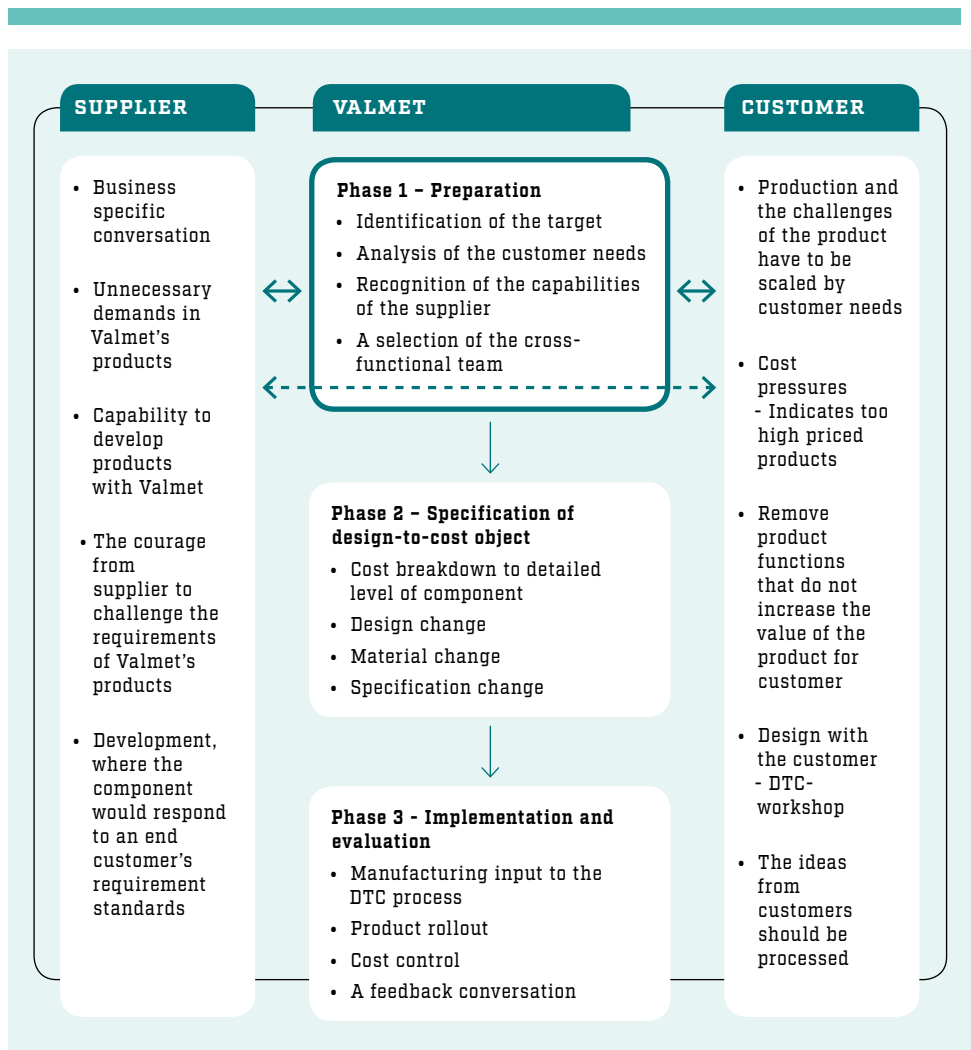
We named the resulting model Design-four-C (D4C). This wider concept includes four perspectives: customer value, collaboration, capabilities, and cost breakdown (Figure 3). Identification and analysis of customer needs is the starting point for D4C in which the most important product features for customers can be highlighted and less important features removed. Capabilities relate to the suppliers and their abilities to offer new kind of solutions for Valmet's product development. Cost breakdown includes the traditional core of DTC, in which the cost structure of the designed product is defined.

FIGURE 3. DESIGN-FOUR-C (D4C)



The structure of the actual D4C model is based on the target cost process by Ellram (2000) and complemented by collaboration between different organizational parties. The process model is effective only when the proposed collaboration between suppliers, buyer, and customer is successful. The model consists of three phases (Figure 4). In the first preparation phase the object for product development is identified with the help of a customer needs analysis. In addition, the participating employees representing diverse functions are identified, such as purchasing, product development and manufacturing. The likelihood of the supplier network being able to satisfy customer needs is also assessed.

FIGURE 4. D4C PROCESS MODEL IN THE CASE VALMET



In the second phase, product sub-components are defined more carefully and the specifications are designed. In this task a detailed analysis of manufacturing costs at the product component level is used for support. In the third phase the new product is launched and manufactured. Experiences from manufacturing are used to gather information for evaluating the success of product development in terms of product features and cost targets. The representatives of manufacturing can give feedback on how their own and suppliers' resources are utilized and how resource use could be improved. Customers in turn can give feedback on the fulfillment of their needs in the new product.

The case study highlighted the first phase, including identification of customer needs and the motivation of different parties to be involved in product development. The issue of factors motivating different parties to engage in product development was studied in the workshop attended by two suppliers and one customer. It was perceived that the customer is primarily active when there is a certain identified problem in an existing product or its delivery which requires solutions. However, the customer was keen to utilize a better feedback system in order to deliver information regarding desired product features. The representatives of the customer suggested that lost tendering cases should be carefully analyzed in order to learn for future bidding processes.

Suppliers A and B noted that one of the main motivating factors to produce initiatives for product development is to demonstrate their own competence to the case company. This was considered to be of help in ensuring the continuity of the relationship. Suppliers also reported that significant cost improvement potential lies in collaborative product design. For example, the supplier may suggest alternative material changes in the components. The suppliers considered that the case company can improve its supplier collaboration by contacting the supplier as soon as possible in the product development process and having an open conversation about product specifications. It is too late to start the discussion during the tendering phase. Collaboration in product development is a promise of business for suppliers and was deemed to require trust between suppliers and the case company.

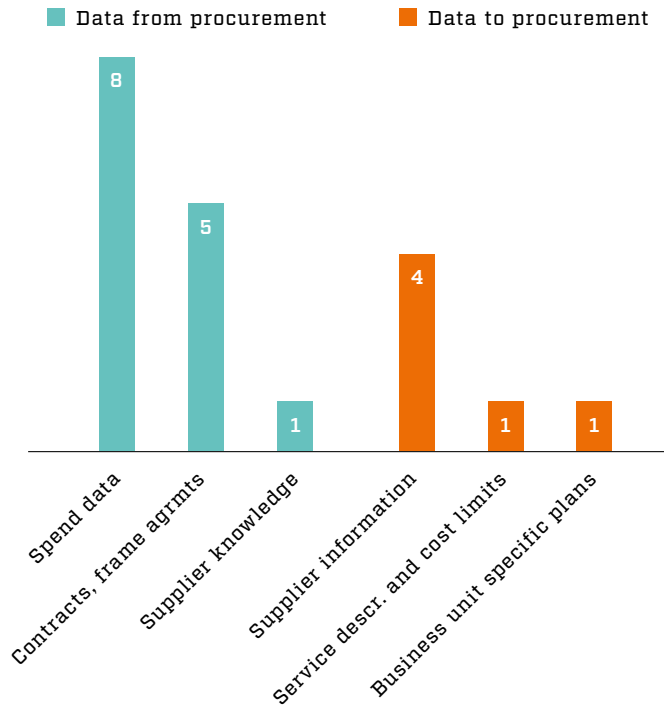
For more information on this case, see Hiidensalo (2016).

4.2. Cross-functional integration by purchasing – Case Tieto

At Tieto the starting point for the case study was the intention to improve the connection between purchasing activities and the business. This link was examined from the viewpoint of quantitative data, which was seen as a means to improve the cost-benefit analysis of purchasing. Data exchange between purchasing and business units at the time of the study was decidedly situation-dependent and the interviewees did not

perceive any formal or planned way for information exchange between procurement and business units. This was also considered a problem in some instances. Figure 5 presents an overview of data exchange between purchasing and business units.

FIGURE 5. INTERVIEW RESULTS ON DATA EXCHANGE



Spend data was considered the most relevant data from procurement. Business units requested spend related information, such as spend per partner, mostly from procurement instead of raw spend data. The second most common data requested from procurement was information on contracts and frame agreements. Most often business units asked about pricing and what kind of agreements the case company had made with a certain supplier. This information was not stored in a database and was requested through e-mails, phone calls or face-to-face. Business units also requested information on suppliers from procurement, but not systematically. Mostly business units were conscious about the supplier base and only sought advice from procurement when the supplier base needed modification.

Procurement mostly requested supplier information from business units. Information requested included the most important suppliers, how a supplier base should be developed and what prospects and opportunities were available for the supplier base. One interviewee reported on procurement asking business units to supply service descriptions, demands, and cost limits for procured services and products. This was needed for making contracts and agreements with a supplier. One interviewee recalled procurement requesting business unit specific plans. This was needed for category development to understand what kind of goals and plans business units had for the future. The plans requested included business unit strategies, budgets, income statements, and information on investments. Strategies and budgets of business units were considered essential for category management.

At Tieto better integration between purchasing and business was deemed important by all interviewees in order to align the objectives of purchasing with those of business. This required shared targets and data-driven integration. Notably the purchasing employees interviewed deemed it important that better information on value-added by purchasing should be provided – not only on the costs of supplies.

Data analysis linking business benefits and purchasing costs would be instructive for both purchasing function and business units. Purchasing could learn to take a proactive approach to decision-making with the additional information on the link between supply costs, offerings, and business impacts. Business representatives can learn more about the value created by different suppliers and the practices by the purchasing function and improve their supply related evaluation criteria.

Data analysis supporting cross-functional integration between the purchasing function and business functions was carried out by combining two datasets. Similar integration of data had not previously been done at Tieto. A case example for piloting the idea was identified in the purchasing category linked to practically all employees, namely travel.

The first dataset included purchasing cost information on employees' travel. The data on business benefits included customer satisfaction, sales, and sales opportunities, which are value outcomes of personal contacts supposedly affected by the employees' travel. Customer satisfaction was considered to relate to travel after a sales deal, while travel before a sales deal was considered to relate to sales and sales opportunities. Table 8 illustrates the variables used in the analysis.

TABLE 8. VARIABLES USED IN THE DATA ANALYSIS

Object of investigation	Variable
Business data	
Sales value	Total contract value of sales and contracts, €
Sales opportunity	Weighted opportunity value No. of active sales opportunities Percent of opportunities gained
Customer satisfaction in projects	A project customer satisfaction survey result (average)
Project size	Number of working hours per project
Purchasing data	
Travel costs	Total travel costs per project, € Total travel costs per month, €

The data on travel costs consisted of around 10,000 travel expense reports from the same business unit in the same time interval. Monthly travel costs were paired with sales data in the first dataset for analysis. Customer satisfaction data consisted of around 3,500 customer satisfaction survey reports on 2,000 projects. Of these 2,000 projects 155 included both travel expense reports and customer satisfaction survey reports assigned to their respective project numbers. The 155 projects were considered to involve travel and were chosen for the statistical analysis. The travel expenses reports compiled per project and customer satisfaction survey reports assigned to these 155 project numbers formed the pairs in the second dataset for the analysis.

Correlation analysis was used as a first attempt to integrate data from business units and purchasing. The results gave some indication of the benefits of travel. A statistically significant positive correlation was seen between the average chance of clinching a sales deal and travel costs. This implies that goal-oriented business travel should not be underestimated.

The results of the statistical analysis were presented in a workshop and possible implications, benefits, and challenges for similar data-driven integration were discussed with representatives from the case company's purchasing function. The representatives found the analysis eye-opening. Understanding the link between a purchased entity and its added value was considered an important aspect of the analysis. Presenting relevant, proactive information on the value provided to business units could enable purchasing to exert more influence and better support decision-making in business units. This would serve to transform the purchasing perspective from being cost-focused towards becoming value-focused. For example, purchasing might

focus more on developing travel to become more goal-oriented to maximize the value it contributes.

One of the main challenges to a similar cross-functional measurement approach was the lack of responsibility for cross-functional issues. According to the company representatives, whoever identified a problem was at that time responsible for finding a solution. Another challenge was more technical. There was no formal platform for sharing measurement information between purchasing and business units. Gathering information from different information systems was time consuming, which inhibited information sharing. Due to limited support from information systems and lack of dedicated resources, the representatives of Tieto considered that this type of measurement could at the time only be considered as a one-off study.

For more information on this case study including a more specific presentation of statistical analyses presenting the benefits of employee travel, see Hirn (2016).

5

Performance measurement in purchasing and supply management

5.1. Status of performance measurement in supplier collaboration

We investigated in our project how performance measurement supports collaboration with suppliers. The companies applied supplier performance measurement widely but mostly in a formal control mode. This means that deviations identified in product quality and delivery performance were communicated to suppliers as they occurred, but non-systematically. Communication appeared one-directional, from buyer to supplier and even the one-directional communication was limited. This might pose challenges since suppliers easily loses interest if a buyer does not communicate performance evaluation results and link them to other similar suppliers. This observation also reflects the lack of communicational structures alongside performance measurement. However, all the companies studied had several formal and informal means to communicate with their companies and therefore a basis for improving the use of supplier performance measurement.

Technical deficiencies in measures may also affect the limited use of performance measurement in supplier collaboration. If measures are technically inappropriate, they

cannot even be considered to support collaboration. Table 9 summarizes the key observations, which are explained in more detail below. It presents two pre-requisite characteristics known according to the existing literature to improve the collaborative use of performance measurement. It also summarizes the situation in the case companies regarding these two characteristics.

TABLE 9. PRE-REQUISITES FOR COLLABORATIVE PERFORMANCE MEASUREMENT

Studied pre-requisite	Observed status in collaborative performance measurement
Non-financial performance measurement	Non-financial measures were used by all the companies but almost solely regarding past transactions, not bilateral relationships Respondents commonly acknowledged the need to improve non-financial performance measurement
Non-standard nature of measurement	All companies had rather non-standard characteristics in their supplier performance measures In companies with continuous production a more systematic approach to supplier performance measurement was desired

Non-financial measures have been proposed to support the use of performance measurement in inter-organizational collaboration. Balancing of measurement was an issue where almost all the respondents clearly perceived room for improvement. Most of the non-financial measures used by the case companies of this study related to historical transactions. The non-financial supplier measures identified in our study resembled those reported elsewhere, for example delivery performance, product/service quality and environmental and safety aspects (Chia *et al.*, 2009). The measures presented can be used as a part of an extended process transcending organizational boundaries, resembling the practices of buying company and indicating reactive behavior, but not as a genuine means for collaboration. Measures for supplier capabilities were requested by the interviewees of Tieto. This is a good example of a measure which could support the creation of relationship value and acting in a proactive rather than a reactive manner.

Standard definitions for performance measures at different organizational levels and units have often been called for in the literature (Choy *et al.*, 2007; Forslund and Jonsson, 2009). Standard practices enable supplier comparisons and facilitate the aggregation of measurement information. However, it has been proposed that the use of performance measurement supporting inter-organizational collaboration requires tailoring to specific relationships (Eriksson and Westerberg, 2011). In Tieto and Valmet

there was a clear variation in the supplier measures applied and this was deemed a mostly satisfying characteristic of measurement. In Metsä Group and Posti the prevailing situation was similar but a desire for more standard ways of measuring suppliers was expressed. This may reflect the characteristics of Tieto and Valmet as project-oriented companies.

The results demonstrate that the importance of collaborative use of performance measurement varies in different contexts and even within the operations of single large companies. At Metsä Group it was evident that when the supplier relationship consists of standard transactions, it is not meaningful to consider more complex measurement solutions supporting supplier communication. On the other hand, the Tieto interviewees identified the need for more proactive supplier information and had already defined measures together with their suppliers. In all the companies, many suppliers provided standard deliveries and required no specific attention to performance measurement. However, some suppliers were regarded as strategic partners and tailored measurement tools supporting collaboration could actually be designed as the observed development project presented in the next section illustrates.

5.2. Measuring the benefits in partnerships - Case Posti

The case study at Posti started by identifying the benefits and risks of close supplier partnerships. In this report, we only concentrate on the benefits side. Five benefits were seen as most important (see Table 10) for the supplier partnerships of Posti. The representatives of Posti evaluated whether the particular benefit could be measured with reasonable effort. Three of the benefits identified were deemed measurable.

TABLE 10. IDENTIFIED BENEFITS OF PARTNERSHIPS

Benefit	Measurability
Utilization of supplier expertise	Yes, but difficult
Optimized quality	Yes
Increased attractiveness from the supplier point of view	No
Decreased risks related to business ethics	No
Decreased direct purchasing costs	Yes, easy

Utilization of the expertise of suppliers was deemed difficult to measure. It was proposed that this aspect could be measured by the number of supplier innovations implemented or added revenue due to supplier innovations. Quality optimization was related to the right level of quality (not too high and not too low) from the customer's perspective. In partnerships the objective of optimizing quality could be shared with the partner and common means to reach the target could be defined. This benefit was regarded as a possible object to be measured. The measures discussed highlighting deviations from the desired quality levels included the costs of incorrect supplies or interruptions to production.

Attractiveness of the case company was the third benefit, and was deemed as extremely important. It could help the supplier to provide its best resources. From the point of view of performance measurement, it was considered that this benefit might be very difficult to present in numerical form. Decreased risks related to business ethics was deemed vital from the perspective of business success. The representatives of Posti were not able to define measures for business ethic-related risks. The direct purchasing costs could be reduced by guaranteeing the suppliers a higher sales volume. Especially in the categories with lower maturity, direct purchasing costs were important. According to the representatives of Posti, direct purchasing costs was an easily measurable object. Measures for the three measurable benefits are presented in Table 11.

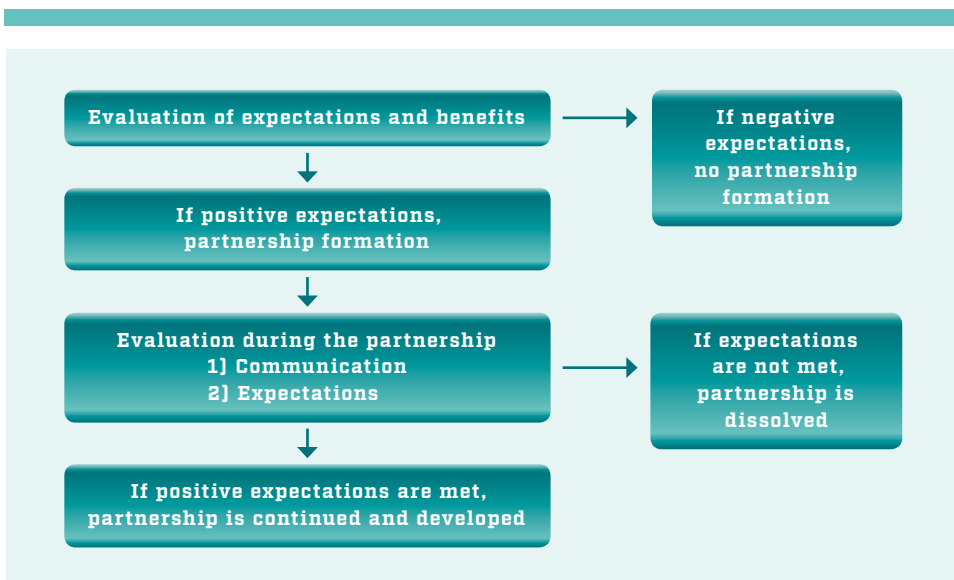
TABLE 11. PROPOSED MEASURES FOR THE BENEFITS OF PARTNERSHIPS

Benefit to be measured	More precisely defined object for measurement	Formula
Utilization of supplier expertise	<ul style="list-style-type: none"> A. Innovations - new business, products and services B. Process improvements - unit costs and total cost of ownership (TCO) C. Optimization of fixed costs 	<ul style="list-style-type: none"> A. Increased sales B. Decreased operative costs C. Decreased operative costs, flexible cost structure
Optimized quality	<ul style="list-style-type: none"> A. Unit cost B. Customer promise, delivery performance 	<ul style="list-style-type: none"> A. Same as below B. KPI delivery performance, timeliness, number of deficiencies in comparison of total production volume
Direct purchasing costs	<ul style="list-style-type: none"> A. Unit cost B. TCO C. Overall value of the agreement is more than the sum of its components 	<ul style="list-style-type: none"> A&B current (TCO) cost vs. new (TCO) cost*volume C. Costs of the entire object of agreement

The further work in the workshops included more detailed definition of the measurement approach of partnerships. It was decided that the performance measurement of partnerships needs to start from the operative evaluation of individual partners. The approach would provide an in-depth understanding of the success of a partnership and factors affecting that success. The participants also felt that the evaluation of expectations of the partnerships on the part of both parties was useful since it could be carried out throughout the partnership's lifecycle. This could also be a good way to understand the cause-effect chains between joint processes and their benefits since individual partnerships are easier to perceive and evaluate. Also, the variation in partnerships and their evaluation criteria supports the choice of measurement highlighting individual relationships. According to an interviewee representing the purchasing function, a key difference in the measurement of partnerships in comparison to the normal supplier evaluations should be that the examination period would be longer, at least the whole length of the agreement period.

The framework by Tuten and Urban (2001) was taken as a basis for designing a new measurement approach for buyer-supplier partnerships but it was modified to meet the context-specific needs of the case organization (see Figure 6). In target setting expected percentage improvements relating to the previous results were to be defined. Targets were to be evaluated regularly and they could be updated if deemed necessary. The examination periods of different targets might also vary, which should be accounted for in implementing the measurement approach.

FIGURE 6. ILLUSTRATION OF THE PARTNERSHIP PERFORMANCE MEASUREMENT PROCESS



The second important aspect in the measurement approach was the evaluation of the obtainment of targets. Different ways of measuring deviations from targets were discussed. Whereas in monetary terms it is possible to evaluate the difference between targets and results obtained, in other forms of measures percentages representing deviances can be utilized. These percentages may be comparable between different measurement objects. Examples of such measures include the number of defects/total number of products and realized service levels/defined standards.

In the case study of Posti a method for aggregating the measurement results of single partnerships was also defined in order to understand the benefits of a partnership at the purchasing category level as well as at the level of the whole company. For more information presenting the measurement approach, see Tynismaa (2016).

5.3. Measuring supplier service quality – Case Metsä Group

At Metsä Group the interest in performance measurement development was in the quality of service suppliers. In service purchasing, the role of quality and subjective aspects was deemed high, which complicated performance measurement. The representatives of purchasing highlighted the need to combine both objective (e.g., number of deviations from the agreed response times) and subjective quality (i.e., quality perceived by employees) of information. Suppliers were active in measuring customer satisfaction annually. Due to the large number of service suppliers, a representative of service purchasing estimated that the number of different customer satisfaction surveys (of their suppliers) could be as high as 200. These surveys had different scales and questions offering no opportunity to compare the results. Obviously, measures defined by suppliers were not always in line with the information requirements of Metsä Group.

A need for measures for service quality perceived by its employees was identified at Metsä Group. The purchasing representatives argued that there should be a link between supplier and customer in the new service quality measurement. The expectations of Metsä Group should be linked to the management and practices of their suppliers. The measurement of supplier processes by the customer was deemed a new idea supportive of the analysis of quality drivers for outcome quality perceived by the customer. It was also planned that quality measurement defined by the customer would support suppliers in enhancing their understanding of customer requirements.

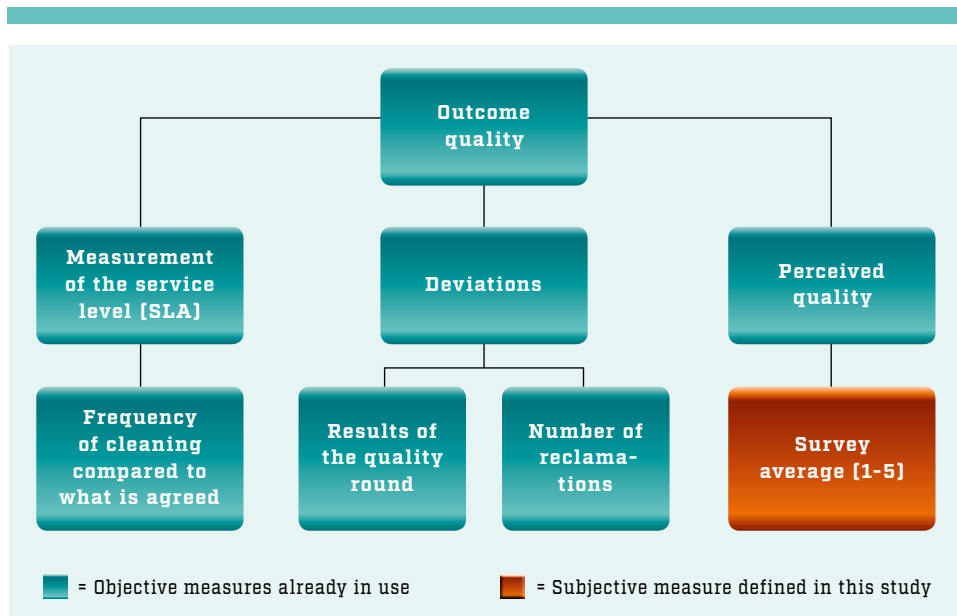
It was regarded as important that the new quality measurement should be applicable to different suppliers and services in order to enable comparisons. Measurement should also act as a continuous support for PSM. At the same time, it was deemed important that the results should be communicated to suppliers in order to agree on common targets. Eventually, the new subjective quality measure would be part of supplier service level agreements (SLAs).

The starting point for the development of quality measurement was a framework applicable to the suppliers of different services. Based on the review of the quality management and measurement literature, a preliminary interview study and the first workshops, an initial version of the supplier service quality framework, was constructed. It comprised four dimensions: *supplier capabilities, relationship, process quality, and outcome quality*.

The supplier capability dimension was included as the case company emphasized the importance of the supplier and its operations in the delivery of a service. This idea is based on the service profit chain literature (Bowen 2008; Heskett et al. 1994). The relationship dimension was included as a faultless relationship between the buyer and the supplier was deemed crucial by the case company representatives. This dimension represents the contractual level where the customer represents the buyer perspective. Process and outcome quality were included according to Grönroos's service quality model (2007).

Cleaning services at the production premises of Metsä Group were chosen as a more specific context for piloting the new measurement. The definition of the performance measurement began by identifying all the quality measures available and linking them into the service quality framework. Figure 7 presents an illustration of the end result in the outcome quality perspective. It is noteworthy that no subjective measure for quality was available in the beginning.

FIGURE 7. ILLUSTRATION OF THE OBJECTIVE AND SUBJECTIVE MEASURES FOR OUTCOME QUALITY



The development work around performance measurement continued with the definition of surveys for supplier service quality. In addition to gaining an understanding of the outcome and process quality perceived by the Metsä Group employees, the surveys were designed to better understand the relationship with a supplier and the capabilities of a supplier. Eventually three different surveys were designed. Table 12 illustrates the factors of the surveys. The first survey was addressed to the employees of a supplier (cleaning personnel), the second survey to the employees of both the supplier and Metsä Group (employees dealing with the relationship contract), and the third survey to the employees of Metsä Group (employees working in the customer facilities).

TABLE 12. FACTORS OF THE THREE SURVEYS DESIGNED

Supplier capability (survey 1)	Relationship (survey 2)	Case company (survey 3)	
		Process quality	Outcome quality
Job enablers Goal clarity Employee empowerment Personal engagement Feedback Supplier's ability to develop the service	Communication Trust	Client-employee interaction Expertise Responsiveness	Perceived outcome quality

A total of 102 responses to the surveys were received: survey 1 (16 responses), survey 2 (8 responses) and survey 3 (78 responses). Due to the small number of responses, comparison of production units was possible only with survey 3. The results were compared between five different production units and the comparison revealed differences in perceived outcome quality. This was the case even though the agreed service level and the agreement costs were roughly the same in all units. The survey therefore provides an added dimension to performance measurement and enables different uses such as unit benchmarking.

The initial idea for the measurement was to identify relationships between objective and subjective as well as the different dimensions of quality. This may be feasible if the frequency of measurement is high enough to obtain a satisfactory number of measurement results in a reasonable period of time. Metsä Group aimed to make the survey a part of monthly monitoring of their suppliers by delivering randomly selected sections of the survey to individual employees. A high enough number of respondents

yields a satisfactory number of responses on all survey sections. Supplier employees could also answer the short surveys during their daily registration of duties at the Metsä Group premises.

Whereas the main dimensions of quality were considered applicable in each case company's supplier service, some additions to the factors and survey statements may be required in different services. The main idea is still that the main structure of the survey should remain the same. When the new survey measurement instrument is fully operational, Metsä Group intends to make it part of its SLAs with a connection to its bonus and sanction system. For more information on measuring supplier service quality, the experiences and results of the case study, see Järvensivu (2017).

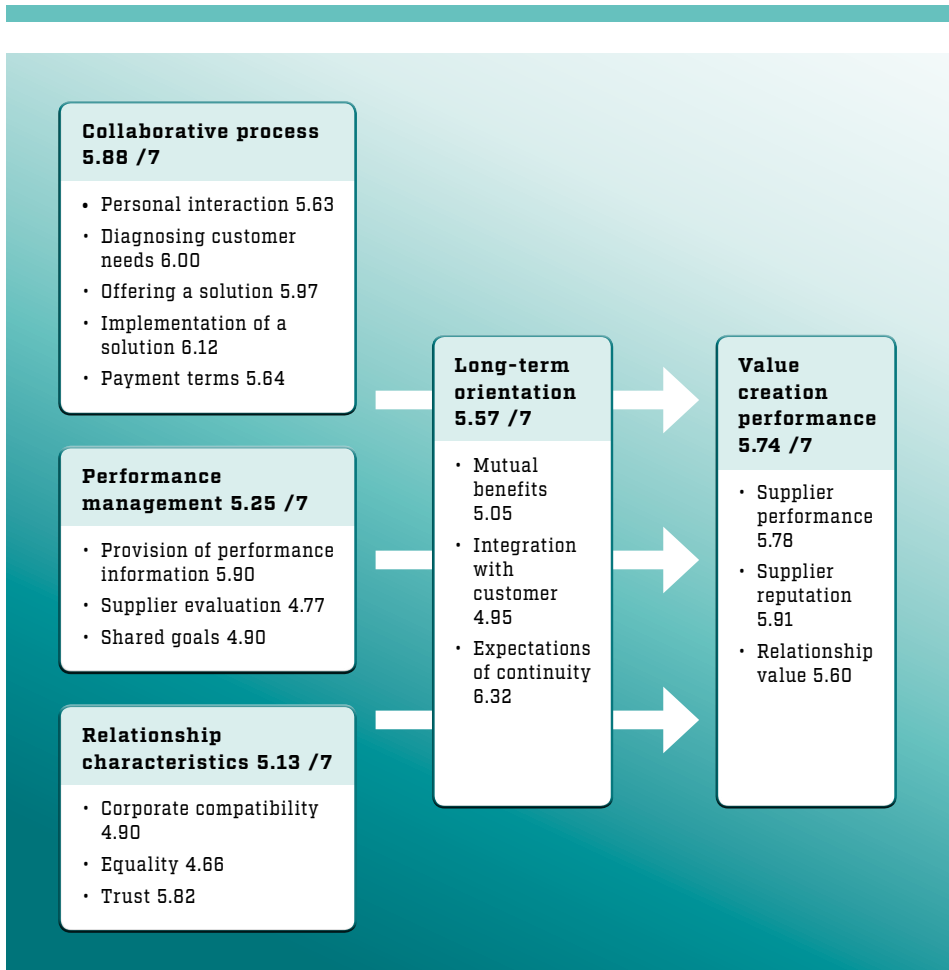
6

Supplier capabilities and the buyer-supplier relationship

6.1. Overview of the supplier survey results

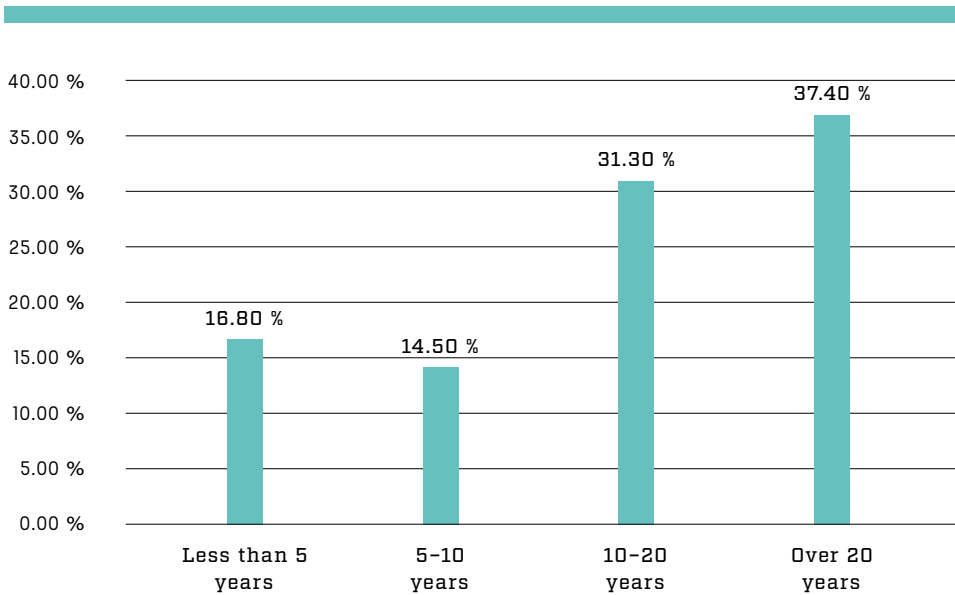
This section presents key observations from the descriptive analysis of the supplier survey addressed to the 662 suppliers of the case companies. The content of the survey is presented in more detail in Appendix 2. This section uses the averages of responses of all respondents. The possible range of results varies 1-7 and a larger number means better status of the object examined. In the design phase of the survey it was hypothesized that 1) collaborative process, 2) performance management, and 3) relationship characteristics are related to 5) value creation performance, and that 4) long-term orientation by the supplier mediates this relationship. Each the five research objects mentioned consists of three to six survey statements. Figure 8 illustrates a proposed framework for value creation through long-term oriented purchasing. In addition, it includes the averages of the survey results in each of its sections. These are elaborated below.

FIGURE 8. OVERVIEW OF THE SURVEY RESULTS



One of the first observations on the results is that the case companies had very long relationships with the suppliers studied. Almost 40 per cent of the suppliers had collaborated with their customer for more than 20 years (See Figure 9). This result challenges the prevailing perception of short-term and frequent supplier changes.

FIGURE 9. LENGTH OF STUDIED BUYER-SUPPLIER RELATIONSHIPS



The results demonstrate that in all the companies the scores are higher in the following aspects:

- collaborative process: supplier's ability to diagnose customer needs, and to offer and implement a solution
- performance management: supplier's ability to provide measurement information
- long-term orientation: suppliers expect continuity in the relationship
- suppliers' perception of their performance and reputation

The results reflect the confidence of suppliers regarding their capabilities in many important aspects of understanding customer needs. Suppliers also widely agreed that their company had a good reputation and performance record. Trust in the continuity of the relationship was also high. The basic conditions for good supplier-buyer relationships should therefore be in place. However, these results may be slightly over optimistic and they should be evaluated carefully.

Probably more interesting observations can be made when looking at the aspects scoring lower overall. These include the following:

- collaborative process: payment terms
- relationship characteristics: perceived equality between supplier and customer
- performance management: effectiveness of supplier evaluation, goal sharing between buyer and supplier
- long-term orientation: perceived mutuality of benefits, integration with customer (specifically influence on customer's product/service design)

Specific attention can be paid to the low score on attendance of suppliers to their customers' product/service development. It appears that the relationships between companies are still rather superficial in this aspect and there is room for improvement in order to realize the potential benefits of supplier innovations. It is also noteworthy that joint setting and monitoring targets between supplier and buyer is rather rare. Further, supplier evaluation results were not widely shared in the relationships studied. Suppliers were not aware of their customers' evaluation criteria, nor did they get the results of these. Shared performance information would, however, be extremely important for the development of suppliers and their ability to provide offerings satisfying customer needs.

As a summary of the survey results, we propose the following improvement objects in buyer-supplier relationships:

Performance management

- supplier evaluation could be used more in joint development
- goals could be more often defined jointly
- measurement information could be shared more

Integration with suppliers could be improved from the point of view of:

- involving suppliers in the development of new products/services
- giving suppliers more performance-based contracts

In addition, many suppliers do not perceive themselves as equal partners in the relationship. This perception and its implications require more attention in the future.

6.2. Contextual characteristics in buyer-supplier value-creation

Suppliers with fewer than ten employees (N=102) have been excluded from the presentation of this section since their responses differed considerably from those of larger companies. The remaining sample is N=560. The focus is on the differences between groups. It should be noted that in the majority of questions, there were no major differences between supplier groups. The analysis is based mainly on a comparison of result averages in supplier capabilities and supplier-buyer relationship characteristics in different contexts. The contextual factors studied include: key supplier status and classification between direct and indirect suppliers (as defined by the buyer), company size of supplier (as reported by the supplier), length of the supplier-customer relationship (as reported by the supplier), product-service orientation of supplier offerings (as reported by the supplier) and standardization-customization level of supplier offerings (as reported by the supplier).

Regarding *key supplier status*, key suppliers' scores were consistently higher throughout the survey when compared to those of non-key suppliers. Around 30 per cent of the respondents were key suppliers. In general, *indirect suppliers* scored higher than direct suppliers. The only exception was supplier evaluation where direct suppliers scored higher. It is possible that customers pay more attention to the evaluation of their direct suppliers. Generally higher scores for indirect suppliers are more difficult to explain. One reason may be that there was a greater share of large companies among the indirect suppliers (40% had more than 500 employees) than among the direct suppliers (27%). Company size was one contextual factor affecting the results.

Middle-sized companies with revenue of 50 – 100 million Euros and 100 – 500 million Euros generally gave slightly higher scores than did smaller and larger companies. Small size of companies had a visible negative impact on some of the aspects studied, such as performance management. Companies with *longer customer relationships* gave responses indicating that:

- they are more active in involving in the product development of their customers
- they are more confident regarding the continuity of their customer relationships
- they are more critical of the effectiveness of supplier evaluation by their customers
- they are more critical of the terms of payment

The product-service –orientation of supplier offerings seemed to have some effects on the results. Service-oriented companies reported results indicating that:

- they are more active in proposing improvements to the operations of their customers
- they offer performance based contracts more often instead of selling resources
- they are more critical of the effectiveness of supplier evaluation by their customers

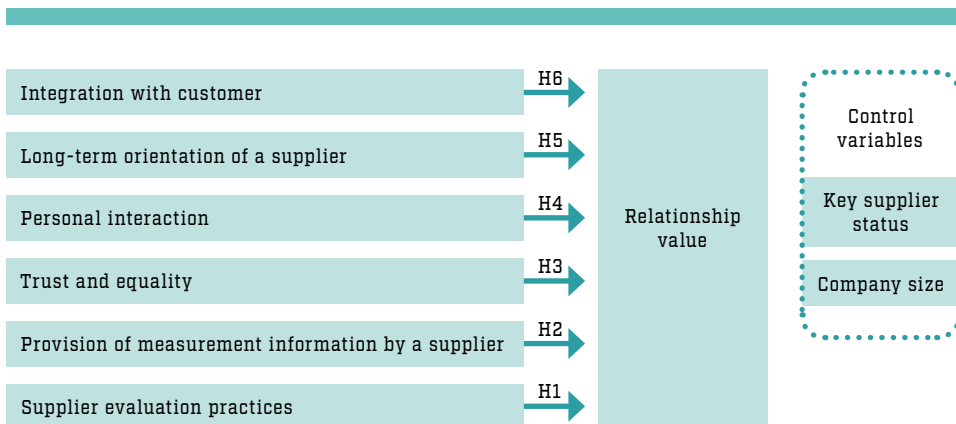
Looking at the results from the viewpoint of *standardization-customization level* of supplier offerings revealed no major differences in the descriptive analysis between the averages of results. Suppliers with a balance of customized/standardized offerings tended to score higher than those with purely standardized or customized offerings. The statistical differences between the factors studied would suggest that suppliers with customized offerings are more integrated with their customers, provide more measurement information on their delivery, and are also more able to provide their customers with supplies. Complex and tailored offerings probably require more information exchange, integration, and ability to provide the customer with alternative solutions.

6.3. Statistical analysis of buyer-supplier relationship value creation

Several statistical analyses on the supplier survey data gathered were carried out on the ProcuValue project. This section presents an example of such an analysis, including factors related to integration with customer (e.g. joint product development), long-term orientation of a supplier (e.g. expectations of continuity by a supplier), frequency of personal interaction between supplier and buyer, trust and equality perceived by a supplier, supplier's provision of measurement information of its offering, and effectiveness of supplier evaluation practices by a buyer. The idea was to ascertain whether the factors listed correlate positively with financial and non-financial relationship value created in the buyer-supplier relationship. All the data from the supplier survey was used but missing data was excluded listwise, meaning that the total number of responses used was 402.

Figure 10 presents the research framework of this study. In addition to studying the relationships presented in the six hypotheses, the study has two control variables. The first control variable is company size measured as the 2015 annual revenue. Larger company size of a supplier may affect the relationship characteristics and the sophistication of the practices in the buyer-supplier relationship. The second control variable is key supplier status as defined by the buyer company. Similarly to the company size, key supplier status is assumed to potentially impact the characteristics of the relationship and the PSM practices applied. For example, key suppliers or large suppliers may receive more attention from the buyer or more formal relationship practices.

FIGURE 10. RESEARCH FRAMEWORK WITH HYPOTHESES



Hierarchical linear regression analysis was used to study the relationships hypothesized. The first model examined the relationship between the control variables and relationship value (dependent variable). The second model studied the relationship between control variables, the main research variables, and relationship value. Table 13 summarizes the main results and shows that hypotheses 1,2,4,5 were supported whereas hypotheses 3 and 6 were rejected.

TABLE 13. RESULTS OF HIERARCHICAL LINEAR REGRESSION (N=402).

	Model 1 Std. Coefficient Beta	Model 2 Std. Coefficient Beta	Hypothesis Support/ reject
Control variables			
Key supplier status	.130*	.023	
Dummy 1 [revenue <2M]	-.161*	-.010	
Dummy 2 [revenue 2-10M]	-.041	.029	
Dummy 3 [revenue 10-50M]	-.017	.010	
Dummy 4 [revenue 50-100M]	.050	.024	
Dummy 5 [revenue 100-500M]	.012	-.020	
Independent variables			
Long-term orientation		.101*	H1 support
Provision of measurement information		.199**	H2 support
Personal interaction		.083	H3 reject
Trust and equality		.262**	H4 support
Integration with customer		.174**	H5 support
Supplier evaluation		.056	H6 reject
R²	0.058	0.446	
Adjusted R²	0.043	0.429	
F statistics	4.029**	26.120**	
F change	4.029**	45.488**	
No. of observations	402	402	

* p-value <0.05; **p-value <0.01

Model 1 included only the control variables. Key supplier status (standardized beta 0.130, $p < 0.05$) and dummy variable 1 (supplier's revenue less than 2 million; standardized beta -0.0161, $p < 0.05$) are significantly associated with relationship value. However, the model has very low explanation of variance (4.3%) indicating that the control variables may not have a major influence in the main research model 2. Model 2 included the independent variables: Long-term orientation, Provision of measurement information, Personal interaction, Trust and equality, Integration, Supplier evaluation. The explanatory power was high (42.9%) and the control variables were not statistically related to relationship value. Hence the results are not affected by possible key supplier status nor size variance of the supplier companies.

According to the results, the long-term orientation of a supplier and supplier's integration with the customer are beneficial to relationship value creation. Similarly, supplier's trust in the customer and perceived equality in the relationship appear as antecedents to value creation. The importance of trust and equality demonstrated in buyer-supplier value creation concurs with the literature on that subject (Fynes et al., 2005; Myhr and Spekman, 2005). Earlier research has given some indication that long-term orientation of a supplier can be beneficial to the relationship value creation. For example, greater expectations of continuity may be conducive to joint action (Heide and John, 1990). This study corroborates these observations. Further, this study finds that close integration between supplier and customer is beneficial to value co-creation. In this study, the integration is related to the involvement of suppliers in the customer's process and product development, and utilization of outcome based contracting.

In contrast to the findings of some earlier studies (e.g. Ulaga and Eggert, 2006), personal interaction was not found to be related to value creation. Furthermore, supplier evaluation was not found to be beneficial as such. A possible reason for the rejected hypothesis related to personal interaction may be that this factor highlighted communication requiring investments of personal time. Technology supporting personal interaction was not included since the aspect was seen to be captured by factors related to performance measurement practices. Earlier research has identified that richer means of communication can deliver more complex information, whereas operative tasks benefit from electronic communication (Daft and Lengel, 1984). In the relationships studied, it appears that means of communication other than personal interaction are seen as more important for supporting the joint tasks between supplier and buyer.

This study gives indications of the importance of performance measurement information provided by the supplier regarding its offerings to the customer. However, the results suggest that supplier performance evaluation is not directly related to relationship value. The study thereby concurs with some earlier research (Cousins et al., 2008; Purdy and Safayeni, 2000) that it is not the supplier performance measurement as such which supports value creation but rather its appropriate use, e.g. complementing it with purposeful communicational practices.

7

Concluding remarks

This section overviews the main results regarding the four key viewpoints of this project. It also offers suggestions for further research and development work in the area of strategic purchasing and supply management. Considering the *benefits of long-term purchasing* this project first explained the varying characteristics of long-term purchasing including close supplier partnerships, strategic technology choices and investments including suppliers. A long-term approach to purchasing, such as utilizing supplier expertise and increasing attractiveness among suppliers was found to yield benefits. However, all the case companies also acknowledged the risks involved in the form of supplier lock-in.

The identified strengths of the purchasing functions studied were the skills of purchasing professionals in ensuring the availability of purchased goods and services, the existence of a long-term purchasing strategy, the documentation of a purchasing process, the connection between purchasing and company strategy, and the awareness of the importance of purchasing contributing to cost competitiveness. Performance measurement is widely applied in strategy implementation within a purchasing function. *The most common development areas of purchasing* included cross-functional integration between the purchasing function and other functions such as product development, production, and marketing, the involvement of suppliers in product development and strategic processes of the buyer company, bundling of supplies, and using and communicating of supplier evaluations. Joint target setting for supplier relationships is not common and new kinds of contracting models such as performance based contracting are rare. Despite the existence of performance measurement for purchasing functions, the most commonly used measure, savings induced by purchasing, was widely criticized.

An important aspect in this project was the *development of new models, practices, and performance measures* supporting contemporary purchasing and supply management. At Valmet a new design-to-cost framework was developed in order to improve cross-functional and inter-organizational collaboration in product development. The framework illustrates the steps required in joint product development aiming at efficient and effective product designs. At Posti an approach for measuring supplier partnerships was designed. The main idea in the approach was to define targets jointly with the supplier in each supplier partnership. The results of each partnership can be aggregated in order to examine the success and benefits of all the partnerships. At Tieto the idea of combining data from different functions was presented and tested with success. Such an analysis improved the understanding of the relationship between the costs and benefits of purchasing. A framework for measuring supplier quality was developed in Metsä Group. In addition, the case study resulted in a survey for measuring the more subjective aspects in supplier service quality. Further, two other surveys were designed in this project. The first related to the evaluation of the maturity of the purchasing function (Appendix 1). The second survey can be utilized for analyzing the capabilities of suppliers and the characteristics of buyer-supplier relationship practices (Appendix 2). All the surveys were designed by utilizing and combining the appropriate existing published survey studies.

The analysis of *supplier capabilities and supplier-buyer relationship characteristics* revealed a foundation for a good buyer-supplier relationship. Suppliers appear capable of both offering and implementing their solutions. They are confident in expecting continuity in their customer relationships. However, integration between supplier and buyer is still often rather superficial. True collaboration in product development is rare. Suppliers do not perceive themselves as equal partners in the relationship nor mutuality of benefits in the relationship.

The companies studied on this project included manufacturing and service companies as well as companies with standard and continuous production and more tailored project production. Some indication of the *differences in the results in these different contexts* were identified. Posti and Metsä Group, operating in process-type industries, seemed to have considerably longer time-frames for looking at the long-term effects of purchasing when compared to Tieto and Valmet, which are in project-type businesses. The role of suppliers in product development was more commonly discussed in project companies, whereas the importance of delivery performance was highlighted in companies with continuous production. Flexibility of supplier deliveries in project companies was related to ability to meet varying customer requirements, whereas in companies with continuous production it was typically seen as the supplier's ability to satisfy the customer demand in terms of capacity. The results also gave some indication that suppliers with customized offerings are more integrated with their customers. In turn, service-oriented companies seem to use more performance-based contracts and are more critical of the effectiveness of supplier evaluation by their customers. Char-

acteristics of supplier relationships such as the key supplier status and the length of the relationship also affected the results. As an example, key suppliers and indirect suppliers typically evaluated the status the relationship practices to be higher.

The project also identified areas *for further research and development in purchasing and supply management*:

- A key topic in this project was long-term oriented, strategic purchasing. This study contributed to the understanding of non-financial value created by strategic purchasing. Yet there is a need to better understand the benefits of long-term purchasing in terms of financial numbers as well as the mechanisms creating the benefits.
- There is a need to better understand when to seek long and close supplier relationships. The risks and disadvantages of long-term purchasing were not addressed in this study but they are usually quite well acknowledged.
- The importance of skillful suppliers providing new ideas and innovations improving the competitiveness of the buyer and the whole supply network was raised in several phases of this project. Increasingly, customers are competing for the most capable suppliers. Much of the earlier literature concentrates on customer satisfaction, while the issue of supplier satisfaction is deserves more attention in the future.
- Digitalization in purchasing and supply management is a topic attracting increasing attention and requiring more research in the future. Much has already been done on automating and digitalizing purchases. This project revealed a topical need for digital supplier portals centralizing all the supplier information (e.g. costs, contracts, supplier offerings and their use in different businesses). Such portals would reduce the need for ad-hoc and manual information requests. Also, a need for a joint platform for product development was presented during this project. This platform would include not only the sharing and visualizing of product designs but also facilitate communication between buyer and supplier. There is also a need to make better use of digitalization in supplier management and control.
- The new idea in performance measurement applied in the cases in this project related to the use of performance information cross-functionally and in collaboration with suppliers. There appear to be few practical examples of these ideas being discussed in the academic literature. More development work is required to apply the ideas presented in practice.

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- Järvensivu, T. 2017. Definition and Measurement of Supplier Quality in Industrial Services. Master's thesis, Tampere University of Technology.
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Appendix 1 Purchasing maturity analysis survey

Background information of the respondent

Company name: *

Responsibility area of the respondent: *

- Purchasing
- R&D
- Operations or production
- Engineering
- Finance
- Logistics
- IT
- Other, please specify:

Which alternative best describes your position in the company? *

- Expert
- Manager
- Director

What is your working experience in your current position in years? *

- below 1 year
- 1-2 years
- 3-5 years
- 6-10 years
- over 10 years

What is your working experience in the company in years? *

- below 1 year
- 1-2 years
- 3-5 years
- 6-10 years
- over 10 years

I. The role of the purchasing function

Please choose to what degree you agree with the statements below. This questionnaire uses a 7-fold scale: the options will be between 'strongly disagree' and 'strongly agree'. If you feel that a statement does not concern your company or that you do not have enough knowledge to be able to answer the statement, you can choose either of these options. If for some reason you are unable to express your opinion on a statement, you can skip the statement.

	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree	Does not concern our company	I do not know
The responsibilities of our company's purchasing organization are clear.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our purchasing organization has a centralized structure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Purchasing is considered to be a vital part of our company strategy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The purchasing organization's views are considered important in top managers' eyes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The purchasing function reports directly to top management.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Purchasing organization is responsible for all procured goods and services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We locate purchasing employees together with the other functions to facilitate cross-functional integration.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The purchasing function collaborates regularly with:

Product and service development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Production or project planning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marketing and sales	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Logistics management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strategic business development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
IT department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Purchasing strategy

	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree	Does not concern our company	I do not know
The purchasing function has a formally written long-range plan.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The purchasing organization takes part in our firm's long-term strategic planning process.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Purchasing is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
involved in make-or-buy analysis and decision making.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Long-term value creation is an important goal of our purchasing strategy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The purchasing function focuses on risk reduction in relation to its supply market.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In our company, purchasing's main goal is control and the reduction of all purchasing-related spend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The purchasing function has good knowledge of the firm's strategic goals.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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A systematic category management approach exists for all categories.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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The degree of separation between the operational and strategic roles of purchasing is high.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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3. Human resource management in purchasing

Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree	Does not concern our company	I do not know
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We have clearly defined career paths within the purchasing function for employee career development.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Several dedicated purchasing personnel spend their time on strategic activities such as market and price/cost analysis.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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The professional development of purchasing employees focuses on the important

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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areas of our competitive strategy.

Our employee salary system guides the purchasing function to the desired direction.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Purchasing professionals have the necessary skills and capabilities:

to monitor and interpret changes in the supplier market/product base.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to secure timely availability of purchased goods and services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to control and reduce purchasing-related spend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to reduce the company's risk exposure in relation to its supply markets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to contribute to product and process innovation within the company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Purchasing process

	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree	Does not concern our company	I do not know
Business needs and requirements are the first input for the purchasing process.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Procured goods and services are systematically analyzed for group-wide pooling potential.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have a defined process for standardizing procured goods and services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have a sufficient level of knowledge about supplier markets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We regularly use Request-for-Proposal in the purchasing process to get new ideas from suppliers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

We define the information exchange practices well in advance of signing the supply contracts.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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We have a systematic procedure for supplier capability analysis before supplier selection.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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A supplier selection process is systematically used to select new suppliers.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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The supplier selection process is carried out cross-functionally.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Our purchasing process is well documented.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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In this section, some statements concern all suppliers and some statements only the most important suppliers which we call here **key suppliers**.

5. Supplier network management

	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree	Does not concern our company	I do not know
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We do systematic supplier management across all the categories.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Our suppliers are well-integrated into our business processes.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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We share sensitive information with our suppliers (for example production, design, research or competition).

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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We have an open-book practice concerning cost structure with our suppliers.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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The key suppliers see our relationship as a long-term alliance.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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We expect our relationships with key suppliers to last a long time.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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We work with key suppliers to improve their performance in the long run.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Our key suppliers have a major influence on the design of our new products and services.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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We involve our key suppliers in business and strategic planning.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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We share profits and risks with our key suppliers.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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6. Purchasing performance management

Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree	Does not concern our company	I do not know
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We have a systematic procedure for continuous supplier performance evaluation.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Performance of all categories is tracked systematically in real time.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Purchasing measurement information is stored centrally.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Purchasing performance is measured in terms of

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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its contribution to our firm's success.

The transparency over purchasing spend is high.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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The target setting mechanism gives our purchasing organization challenging yet achievable targets.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Purchasing budget owners are fully responsible for the realization of savings targets in their domain.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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The supplier evaluation results are communicated to suppliers on a regular basis.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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We utilize both financial and non-financial measures in managing our purchases.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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We understand the cause-effect chains between our different performance measures.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Our performance measurement information related to purchasing is reliable.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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7. Performance of the purchasing function

	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree		Does not concern our company	I do not know
The purchasing function has contributed significantly to our company's business results during the last 3 years.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our purchasing function achieves the objectives set for it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I am satisfied with the performance of our purchasing function.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix 2 Supplier survey

Section 1: Background information

In this section, there will be questions regarding your and your company's background. Also, there will be some background questions about your company's relationship with <CUST>. Questions marked with asterisk are obligatory to answer.

How long have you worked for your present employer? *
How long have you worked in your present position? *

Which of the following alternatives best describes your own area of responsibility? *

CEO/Senior management	<input type="checkbox"/>
Key Account Management	<input type="checkbox"/>
Sales	<input type="checkbox"/>
Product/Service Support	<input type="checkbox"/>
Finance	<input type="checkbox"/>
Other, please specify:	<input type="checkbox"/>

Please choose the appropriate alternative regarding the annual revenue of your company in 2015.

Under 2 million Euros	<input type="checkbox"/>
2 million - less than 10 million Euros	<input type="checkbox"/>
10 million - less than 50 million Euros	<input type="checkbox"/>
50 million - less than 100 million Euros	<input type="checkbox"/>
100 million - 500 million Euros	<input type="checkbox"/>
Over 500 million Euros	<input type="checkbox"/>

Please choose the appropriate alternative regarding the number of employees in your company by the end of year 2015.

Under 10 persons	<input type="checkbox"/>
10–19 persons	<input type="checkbox"/>
20–49 persons	<input type="checkbox"/>
50–99 persons	<input type="checkbox"/>
100–249 persons	<input type="checkbox"/>
250–499 persons	<input type="checkbox"/>
500 persons or more	<input type="checkbox"/>

Where are your company operations located? (Please tick all relevant options)

Finland	<input type="checkbox"/>
Scandinavia (Sweden, Norway, Denmark and Iceland)	<input type="checkbox"/>
Western Europe (excluding Finland and Scandinavia)	<input type="checkbox"/>
Eastern Europe	<input type="checkbox"/>
North America	<input type="checkbox"/>
South or Central America	<input type="checkbox"/>
Asia	<input type="checkbox"/>

Rest of the World (Africa, Australia, Middle East)	<input type="checkbox"/>
Less than 1 year	<input type="checkbox"/>
1 year - less than 3 years	<input type="checkbox"/>
3 years - less than 5 years	<input type="checkbox"/>
5 years - less than 10 years	<input type="checkbox"/>
10 years - 20 years	<input type="checkbox"/>
More than 20 years	<input type="checkbox"/>
N/A	<input type="checkbox"/>

Section 2: The collaborative process

This part of the survey explores the collaboration practices between your company and <CUST>.

Communication	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	N/A
We communicate frequently enough with <CUST>'s personnel.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have meetings frequently enough with <CUST>'s personnel.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is easy to collaborate with <CUST>'s personnel.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is easy to identify the right contact persons at <CUST>.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Invoicing	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	N/A
The invoicing process with <CUST> functions well.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The payment terms of <CUST> are clear.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The payment terms of <CUST> are fair.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Customer needs

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	N/A
We assist <CUST> to articulate their needs concerning our company's products or services.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We offer <CUST> alternative product or service options.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We understand the needs of <CUST> regarding...								
...product or service specifications.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...delivery time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...product or service price.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...product or service quality.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Offering a solution

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	N/A
We are active in providing <CUST>'s business with the most appropriate solution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We accelerate the joint design of a solution with <CUST>.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We offer additional products or services to meet those customer needs that arise during the delivery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Implementation of a solution

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	N/A
We have the capacity to support the implementation of our product or service in <CUST>.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We accelerate the fluent implementation of our product or service at <CUST>.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We offer <CUST> long-term support in its use of our product/service.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We support <CUST> in achieving long-term benefits from our product/service.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 3: Characteristics of the supplier-customer relationship

This section concerns the characteristics of supplier-customer relationship between <CUST> and your company.

Culture and management style

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	N/A
We share a similar organizational culture with <CUST>.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our company and <CUST> have similar management styles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our cultural background does not create challenges in the relationship with <CUST>.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Support and division of tasks

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	N/A
We believe that <CUST>'s activities will be helpful to our business.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
When it comes to things that are important to us, we can depend on <CUST>'s support.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<CUST> keeps its promises to our company.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In our relationship with <CUST>								
...<CUST> exerts influence over our company. [R]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...important decisions are taken jointly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...distribution of responsibilities is jointly negotiated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Risks and financial benefits

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	N/A
We share risks with <CUST>.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We give a share of cost savings we have achieved to <CUST> as price reductions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<CUST> pays us fairly for our products or services.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Connection to customer's business

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	N/A
We are active in proposing improvements to <CUST>'s operations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

We prefer to offer performance-based contracts (e.g. solutions to problems) than to sell resources (e.g. working hours or goods) to <CUST>.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We offer products or services which relate to <CUST>'s investments having long-term impacts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have major influence on <CUST>'s design of new products or services.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Future outlook

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	N/A
We expect our relationship with <CUST> to continue for a long time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We consider not only individual deliveries but also the continuation of the relationship.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are many positive reasons for maintaining this relationship.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We see our relationship with <CUST> as a long-term partnership.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the future, we can count on <CUST> to consider how its actions will affect us.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 4: Information sharing

This section of the questionnaire concerns performance measurement and information sharing between your company and <CUST>.

Provision of measurement information

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	N/A
We can provide <CUST> with credible Total Cost of Ownership calculations of our products or services.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We can support the operations of <CUST> by providing quantitative information concerning...								
...the quality of our products or services.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...delivery schedules of our products or services.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...our production capacity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...lead time for production.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Supplier evaluation

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	N/A
We know <CUST>'s supplier evaluation criteria.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<CUST> shares supplier evaluation results with our company.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<CUST>'s supplier evaluation results support us in improving our operations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Shared goals and measurement	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	N/A
Our company and <CUST> share relevant cost information with each other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We set the strategic goals for the relationship together with <CUST>.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
We have a systematic approach to sharing performance measurement information with <CUST>.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Representatives of our company and <CUST> meet regularly to review the performance of the relationship.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our company's goals regarding the relationship are consistent with those of <CUST>'s.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 5: Performance and value-creation

This part of the questionnaire addresses your perceptions of your company's performance and the joint performance of your company with <CUST>.


Performance in the industry	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	N/A
Our company is among the leaders in its industry in terms of...								
...profitability.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...product or service quality.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...product or service development activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...technological knowledge.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...product or service innovations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...sales growth.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Position in the markets	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	N/A
Our company's attractiveness as a business partner for our customers has improved during the last 3 years.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our company is more trustworthy in the eyes of its customers in comparison to the situation 3 years ago.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our company is regarded as a partner among customers who are leaders in their industry.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Benefits of the relationship

Please answer to these statements from the view of your company's and <CUST>'s **joint** performance.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	N/A
Our joint performance with <CUST> is better than 3 years ago in terms of...								
... delivery performance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... cost-efficiency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... fulfilment of quality standards.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...responsiveness to requests for changes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
... joint product or service development.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
...technological knowledge.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The background features a dark blue gradient with vertical columns of glowing blue and white numbers (0-9) scattered across the top half. The bottom half is dominated by a series of bright, curved light trails in shades of orange and yellow, creating a sense of motion and digital connectivity.

This report summarizes the main results of the Tekes funded Value Creating Procurement (ProcuValue) project implemented in January 1, 2015 – October 31, 2017. The project examined the shift in purchasing from a classical purchasing philosophy reflecting a transaction-oriented approach to a modern purchasing philosophy highlighting a strategic and long-term oriented approach to purchasing and supply management. The project had four case companies: Metsä Group, Posti Group Corporation, Tieto Oyj, and Valmet Corporation. Also more than 600 suppliers of these four companies were involved in the project.

This report is addressed to both academics and practitioners interested in the status and current developments of strategic purchasing and supply management in Finnish companies. It provides results and explanations regarding topical phenomena around value creating procurement and also models, tools and solutions supporting in developing the practices of purchasing and supply management.

The authors of this report are researchers from the unit of Industrial and Information Management, Tampere University of Technology and they work in the areas of operations management, purchasing and supply management, and performance measurement and management.