



Customer perceptions of service quality and image in pulp and paper and power generation industry

Case Metso

Master's Thesis

Timo Ilmoniemi

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Tiivistelmä/Referat – Abstract Tämän tutkimuksen tarkoituksena on tutkia asiakkaiden havaintoja palvelun laatuun ja yrityksen imagoon liittyen. Laatuun ja imagoon liittyvät näkökohdat liittyvät tutkimuksessa Metso konsernin One Metso konseptiin. Tutkimuksen kohteena olevat asiakasyritykset edustavat sellu- ja paperiteollisuutta sekä voimantuotantoa. Käsitteistöltään tutkimus perustuu laatua ja yrityksen imagoa käsittelevään kirjallisuuteen. Kirjallisuuskatsaus esittelee laatuun ja erityisesti palveluiden laatuun liittyviä erityispiirteitä. Olemassa oleva palveluiden laatua koskeva kirjallisuus perustuu pitkälti yritysten ja yksityishenkilöiden väliseen suhteeseen ja teoreettiselta pohjaltaan SERVQUAL tai Nordic model malleihin. Edellä mainittujen mallien ulottuvuuksia on hyödynnetty myös tässä tutkimuksessa, mutta painotus on yritysten välisessä (B2B) asiayhteydessä. Tämän alan tutkimuksia on tehty viime vuosikymmenenä. Tutkimuksen tulokset perustuvat kyselytutkimukseen joka on tehty Metson sellu- ja paperi sekä voimantuotannon asiakkaille. Kyselyn on tehnyt puhelinhaastatteluihin erikoistunut yritys. Kyselytutkimuksen vastaukset on tässä tutkimuksessa tilastollisesti analysoitu käyttäen ei-parametrissa testausmenetelmää. Perustuen vastausten jakaumaan käytetty testausmenetelmä kaikille kysymyksille oli riippumattomien näytteiden Mann-Whitneyn U testi. Tilastollisen testauksen tuloksien perusteella nollahypoteesi hylätään kahdessa asiakkaille esitettyssä kysymyksessä kaikkiaan neljästätoista. Automation ja Power segmenttien asiakkaiden havainnot ovat yhteneviä useimmissa laatuun liittyvistä kysymyksistä. Saadut tulokset tukevat Metson One Metso konseptia. Jatkotutkimuksen aiheena toimisi keskittyminen yrityksen nykyisiin muuttuneisiin segmentteihin syventäen samalla kyselyn laatuunäkökohtia.			
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Säilytyspaikka – Förvaringställe – Where deposited HELDA-verkkoarkisto			
Muita tietoja – Övriga uppgifter – Additional information			

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1. INTRODUCTION

1.1 General on Metso Corporation and its business

Metso Corporation is in Finnish scale a large multinational company. At the time of the study it employed over 30 000 employees in over 50 countries. Metso serves business to business (B2B) customers in various industries ranging from pulp and paper industry to mining and construction industry. Multinational companies such as Metso that operate with different customer segments face challenges in building solid and preferable image among customers. Every company's interest is to make stakeholders and outside world's impression of them more preferable. In general level, company image means outside world's impression of reality (Karlöf 1999, 218).

Normally B2B markets have more limited amount and more active buyers than business to customer (B2C) markets. Typically B2B orders are more complex and require deep and widespread attention. Two important aspects of these markets are relationships and value creation (Albadvi & Hosseini 2011, 1). To differentiate from competitors, successful value creation challenges companies to utilize tangible and intangible potential such as services, brand and image. Companies are aware that product purchase decision of customers is not only influenced by the product value alone but also by the after sales service and support (Fehl 2006, 6). Service quality is by nature felt subjectively. Therefore understanding how the customer thinks about service quality is essential to effective management of the company (Rust & Oliver 1994, 2).

Metso has been in recent years building image as a more single entity. This more unified concept is known as One Metso. Concept's purpose is that whole organizational group is seen as one unit providing needed solution. Not as a bunch of separate professionals. There are already success stories e.g. from Brazil where One Metso approach has brought significant orders for Metso. Win-win situation is created when also customers may benefit of wide presence and knowledge of Metso globally. One example of this is a mining project for which Metso is delivering both mining technologies and automation (Results Automation Magazine 2011, 2).

Although this is only a single example it proves that Metso can bring solutions to end customers from many different perspectives.

Metso measures its customer's perceptions and satisfaction regularly. In large company studies are executed as corporate, business unit or lower level studies. The main topics that the questionnaire also used in this study covers are company image, product and service quality, price level and customer commitment. Naturally it is customer's not company's perception of e.g. own product quality that is crucial for company's success. What may not be so obvious is the importance on continuous follow-up of customer perceptions since the relative importance of various dimension may change over time (Toivonen 2011, 12).

1.2 Motivation of the study

In this study, the aim is to focus on Automation and Power power customer segments of Metso and statistically analyze the possible differences and similarities in their customers' perceptions of image and service quality.

Comparing the perceptions of two different B2B customer segments by using statistical methods creates possibility to have more in-depth knowledge of two different customer segments and of their perceptions. Firstly this offers valuable data for the company and secondly in wider perspective contributes in research made in B2B field as existing research on service quality is mostly done in business to customer field. According to FehI (2006, 3) there remains a substantial gap in business-to-business service quality literature. Even in wider perspective B2B services have remained a rather unexplored area of research. Limited research has been done in the area of logistics performance for example by Rafele (2004) and in supply chain management by Zhang and Hou (2013).

Besides studying differences between more or less fixed segments, the use of customer data gives a possibility to investigate the existence of One Metso concept.

One Metso in brief means solid brand and communication towards customers and stakeholders as just one Metso not as a Metso Automation or as Minerals etc. Many employees may find this kind of terminology as just one more concept or idea that marketing department has come up with. Getting people behind this is a challenge for management. It is especially challenging when organization's business lines are changing from segment to another or some segments end up being divided to another company.

2. PURPOSE AND IMPLEMENTATION OF THE STUDY

Purpose of this study is to answer to following research questions based on the statistical analysis of a customer satisfaction questionnaire.

Q1. What are the similarities and differences between customer perceptions across Automation and Power segments?

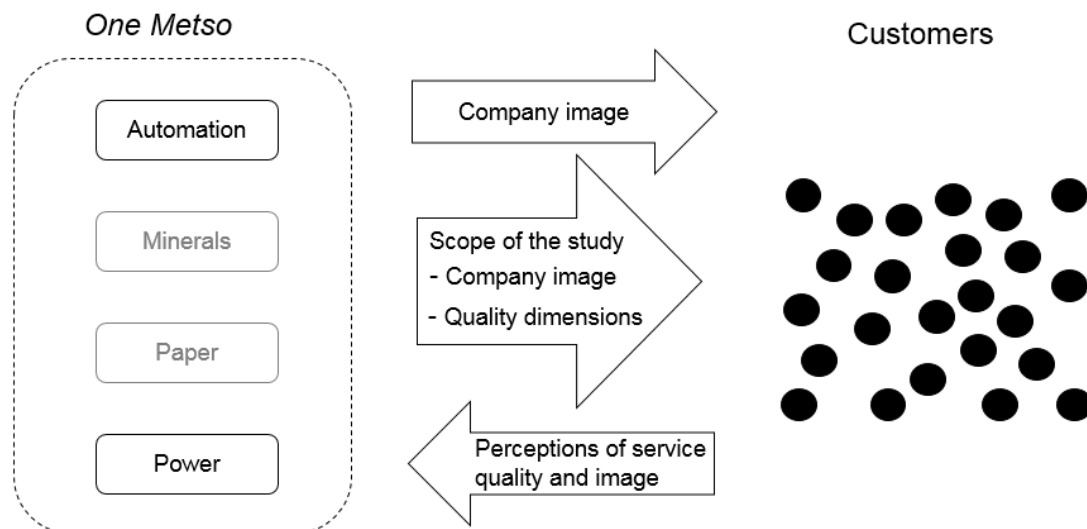
Q2. Do these customer perceptions give support to One Metso concept?

This study is implemented by first carrying out literature review of customer perceptions on service quality and company image. Answers to research questions are then sought by statistically analyzing set of answers to questions that are part of customer perception study carried out by Metso in 2011. Customer perception study was on general level focused on the company image and perceptions of company's operations, but provides opportunity to also test differences across units.

3. CONTEXT OF THE STUDY

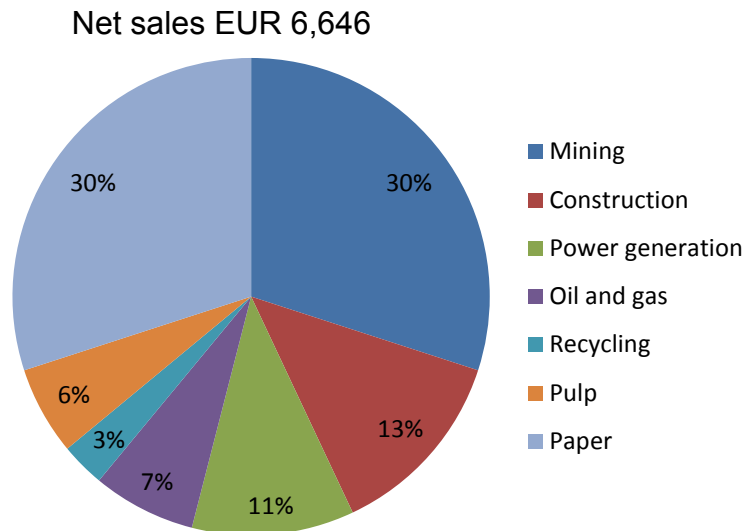
3.1 Metso Corporation at the time of the study

This chapter introduces the framework of this study and gives basic information of Metso Corporation as it was during the time of customer data collection. Latter part of the chapter explains the One Metso concept.



Picture 1. Conceptualization of the study.

Metso at the time of the study was a global supplier of technology and services to customers in process industries, including mining, construction, pulp and paper, power, and oil and gas. Metso employed in 2011 about 30,000 employees in 50 countries. In 2011 Metso Corporation's net sales were EUR 6,646 million. 45 percent of Metso's net sales came from the services business included in all segments of the company. Metso's segments at the time of the study were: Automation, Minerals, Paper and Power. Picture 2. illustrates net sales distribution between different industry types.



Picture 2. Metso's net sales by customer industry in 2011.

The scope of this study covers customers operating in power generation and in pulp and paper industries. These industries are customers of Automation and Power segments.

3.2 Organizational structure of Metso

Metso's organizational structure has been changed several times after the data collection for study in 2011. Questionnaire subjects were originally Energy and Environmental Technology (EET) segments customers. Since that time organizational structure has changed twice. First in the end of year 2011 and for the second time in late 2013. The latter change was more dramatic and resulted in demerger which was later executed in the end of 2013. As result Pulp, Paper & Power segment was separated to company called Valmet. Originally Valmet was the name of the paper machine company which was merged to Rauma-Repola when Metso was formed. Despite the changes in segments and later more drastic changes I found it motivating to carry on with this research. Even though many of the customers are currently in relation with only one of the companies it is possible to learn about their perceptions before the demerger.

Automation segment

Automation segment had been a separate business segment since the end of 2011. Automation segment aimed to grow its share in all of Metso's customer industries, organically and through business acquisitions. The segment was specialized in process industry flow control solutions, automation and information management application networks and systems as well as life cycle performance services.

With almost 3,900 employees, Automation segment operated globally through sales and customer support units in 39 countries across Europe, North and South America, Asia and Africa. Automation had production facilities in South-America, North-America, China, Finland and in Germany. The valves and positioners were assembled mainly in own factories. Whereas components were outsourced. In 2011 Automation's net sales were EUR 770 million. Services account for about half of the segment's net sales, which is a reasonable high figure.

Pulp, paper and power segment

Power segment together with Paper segment was in the time of the study in 2011 combined into Pulp, Paper and Power segment (PPP). It specialized in pulp, paper and power industry processes, machinery, equipment, services as well as paper machine clothing and filter fabrics. Product offering extends over the life cycle of the process, covering new lines, rebuilds and services.

This segment had at the time of survey its own operations and production in 26 countries in over 100 locations. Products and services were sold by approximately 50 sales units. Segment had over 100 service locations in different parts of the world. Logistics centers were situated in Finland, USA and China. Pulp, Paper and Power segment had altogether 14 technology centers in Finland, Sweden, Italy and the USA.

In 2011 the net sales of the Pulp, Paper and Power segment was approximately EUR 2,700 million, and the amount of personnel was approximately 12,500 employees. The largest market areas were Europe, Asia and North America.

3.3 Key elements of Metso's strategy and marketing

Metso's strategy is introduced briefly in this chapter by introducing those elements that have importance considering this study. Current strategical period covers time period from 2012 to 2016. Company's ambition is to be the leading technology and service provider in all of its businesses. This has been indicated in company's strategy. Selected strategic priorities are services, growth countries and mining business. While the company seeks to grow its focus is to stay competitive the same time. (Intranet 1).

In order to achieve the wanted position Metso has defined five group level "must-wins". Each segment implements these "must-wins" through strategic actions in order to achieve segment-specific targets. Group-level "must wins" are:

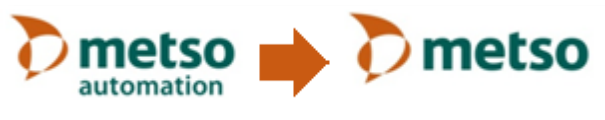
1. **People.** Good working environment attracts the right people and supports the development and productivity of Metso employees.
2. **Operating model.** Secure quality of operations and deliveries globally with cost efficiency improvements.
3. **Services.** Growth of market share and profitability of services business.
4. **Growth countries.** Reinforcement of presence and growth in business-relevant growth countries.
5. **Technology.** Maintain technology leadership with cost-efficient and sustainable solutions and fit-for-purpose products that meet customer needs.

The "must-wins" aim to maximize Metso's value creation and to support the implementation of the strategy.

“Must wins” aim to guide the business development and work as foundation for working together and One Metso concept. As one example improving customer centricity at Automation is an important part of reaching targets and utilizing growth potential. With new operating model in certain geographic areas Metso has gained a stronger local market and customer integration. This has improved growth opportunities and enabled the company to serve its customers in a more efficient way (Intranet 1).

One Metso Concept

Multi-national groups such as Metso naturally seek synergies between their different segments and units. Metso’s vision is “Working as one to be number one”. Existing vision leads to concept of One Metso. One Metso approach can be seen in company’s logo and is expected to be part of everyday communication in Metso. Following picture 3. displays the change in Metso Automation’s logo after implementing One Metso concept in year 2011.



Picture 3. Metso logo development as result of One Metso concept.

New logo does not include the segment information anymore. It aims to communicate customers and stakeholders clearer image of a strong company.

Marketing model of Metso

Metso’s goal is to sell high-tech products, solutions and services that meet and exceed customer needs and expectations. Customers need to be convinced about the added value that Metso offers to improve their business. Following picture 4. introduces the marketing model used in Automation.



Picture 4. Marketing in Metso Automation segment (Intranet 3).

According to the model marketing is divided into business line marketing, segment marketing and region marketing. All of these are linked to each other, and in the core is "working together".

4. CONCEPTS OF THE STUDY AND LITERATURE REVIEW

This chapter introduces the main concepts around the topic of this study. Focus is on customer's perception of company and on its value creation aspects. Literature review introduces main quality concepts and dominant service quality models.

4.1 Customer perception, value, satisfaction and loyalty

According to Kotler (1999) the basis of any business is a product or offering. A company aims to make the product or offering different and better in some way that will cause the target market to favor it (Kotler 1999, 97). Classically products are differentiated using marketing mix and the four Ps. From customer's point of view the move from Ps to four Cs are described by Kotler (1997, 96) as follows:

- Product to Customer value
- Price to Cost to the Customer
- Place to Convenience
- Promotion to Communication

The first P stands for both tangible goods and intangible services. Beside intangibility services are seen to have three more features. They are inseparable, heterogenic and perishable (Molinari et al. 2008, 363). Closer separation between tangible and intangibles is introduced later in the implementation of this study.

In addition to traditional four Ps service marketers have adopted an expanded marketing mix that includes three added variables: people, physical evidence and process (Zeithaml et al. 26, 2006). These and traditional four Ps are listed in Table 1.

Table 1. Expanded marketing mix model (Zeithaml et al. 2006, 26)

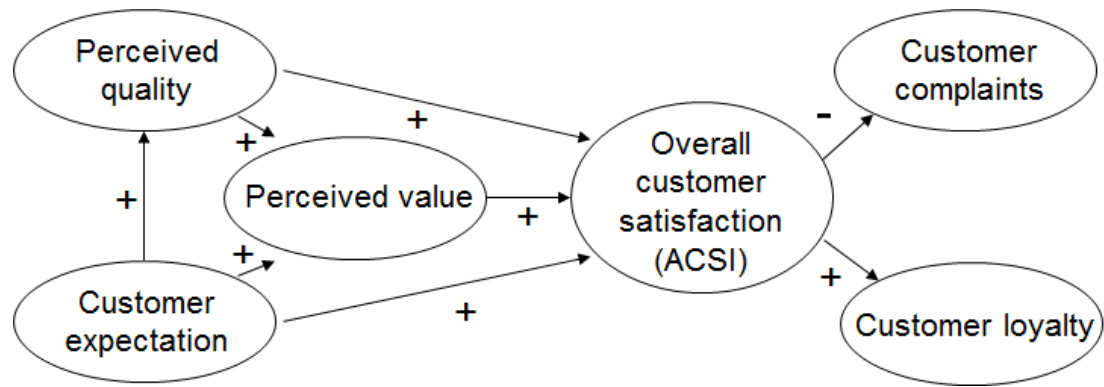
Product Physical good features Quality level Accessories Packaging Warranties Product lines Branding	Place Channel type Exposure Intermediaries Outlet locations Transportation Storage Managing channels	Promotion Promotion blend Salespeople -selection -training -incentives Advertising -media types -types of ads Sales promotion Publicity Internet/Web strategy	Price Flexibility Price level Terms Differentiation Discounts Allowances
People Employees -recruiting -training -motivation -rewards -teamwork Customers -education -training	Physical Evidence Facility design Equipment Signage Employee dress Other tangibles -reports -business cards -statements -guarantees	Process Flow of activities -standardized -customized Number of steps -simple -complex Customer involvement	

Customer value can be seen as combination of quality, service and price (QSP). Value increases with quality and service and decreases with higher price. Kotler has introduced following formula concerning value:

$$\text{Value} = \frac{\text{Benefits}}{\text{Costs}} = \frac{\text{Functional + emotional benefits}}{\text{Monetary, time, energy and psychic costs}}$$

(Kotler 2003, 11)

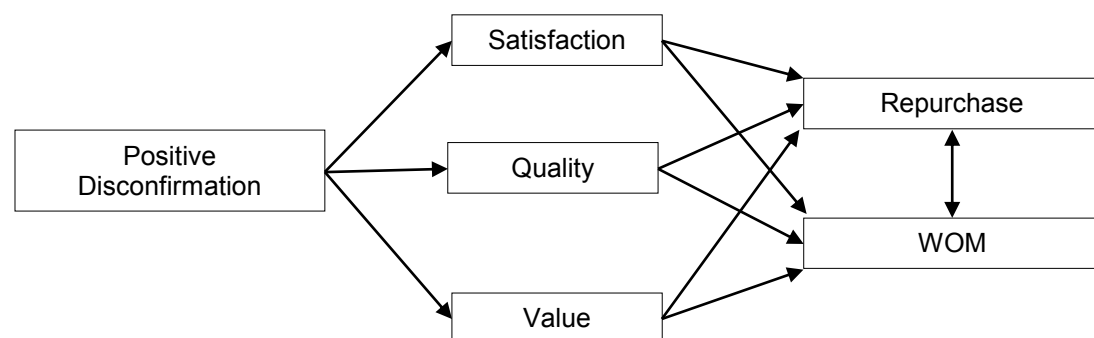
Perceived quality and value in larger context are related to overall customer satisfaction as seen in Picture 5. Positive traces in this model are marked with '+' sign and negative from customer complaints with '-' sign.



Picture 5. Customer satisfaction and its relationships (Fornel et al. 1996, 8).

Customer satisfaction and perceived quality are often used interchangeably. Though they appear to be highly similar the two are different constructs (Iacobucci et al. 1995, 277). Quality can be defined as excellence or superiority (Zeithaml 1998, 22).

Value is more individualistic and personal than quality. It is therefore higher level concept than quality (Zeithaml 1998, 22). Company that delivers high value must deliver consistent quality at low price (Heskett et al. 1990, 21). As suggested in Picture 6. positive disconfirmation leads through satisfaction, quality and value to repurchase and positive word-of-mouth also in B2B environment.



Picture 6. Antecedents affecting repurchase and positive word-of-mouth (Molinari et al. 2008, 364).

Measurable knowledge of customer satisfaction and perception of quality and value with respect to customer behavioral intentions can lead to changes in firm profitability and is therefore important information for any company (Molinari et al. 2008, 364).

4.2 Perception of the total product quality

Following chapters introduce perceptions of total product by first familiarizing with different definitions of quality. Motivation from economical point of view to the question concerning total product quality is in form of a question: do quality improvements lead to higher or lower profits? As a frontrunner in this field David A. Garvin has introduced five different approaches to quality based on disciplines that are philosophy, economics, marketing and operations management (Garvin 1984, 25).

1. Based on philosophic theories **transcendent approach** views quality as absolute and universally recognizable. Quality is a mark of uncompromising standards and high achievement. On the other hand it cannot be defined precisely as people learn to recognize it through experience (Garvin 1984, 25).

2. **Product-based definition** views quality as a precise and measurable variable. Differences in quality reflect differences in quantity of some ingredient or attribute that the viewed product has. Higher quality can be achieved by producing more of these costly attributes. Quality reflects presence or absence of measurable product attributes and can be assessed objectively. Roots of product based definition is based on economical literature. (Garvin 1984, 25-26).

3. **User-based approach** assumes that individual customers have individual preferences. Goods that satisfy their needs best are the ones that are considered to have superior quality. Whether viewed from marketing, economic or operations management point of view, the challenge is how to gather the information of individual preferences and how to recognize those preferences that have more weight in the decision-making than the others.

Another challenge in equation of quality and maximum satisfaction is that product may be more preferable and maximize satisfaction but is it also better in quality sense as well? (Garvin 1984, 27).

4. Manufacturing-based approach. These definitions of quality focus on the supply side of quality equation (whereas user-based was on demand side). Engineering and manufacturing practices are the primary concerns of this approach and quality is identified as conformance to requirements. Reliability engineering and statistical quality and manufacturing control are examples of this approach. Deviations are meant to eliminate in early faces of production and products are designed to be reliable. In the end manufacturing based approached based techniques focuses on cost reduction. Improvements in quality are equivalent to reductions in the number of deviations (that cause costs). (Garvin 1984, 27).

5. According to **value-based approach** a quality product is one that offers performance at an acceptable price or conformance at an acceptable cost. Further on quality is perceived together with price. As a result this concept blends quality which is measure of excellence and value which is measure of worth. The outcome is affordable excellence that is hard to define precisely. (Garvin 1984, 28).

In sum, Garvin (1984, 29) has identified eight dimension as basic elements for product quality thinking to be:

1. Performance
2. Features
3. Reliability
4. Conformance
5. Durability
6. Serviceability
7. Aesthetics
8. Perceived quality

Next, these viewpoints are discussed in more detail and perspectives from other authors are introduced.

1. Performance refers to the main operating characteristics of the product. For motorcycle, for example, this is acceleration, handling etc. For some mobile device the relevant characteristics maybe weigh, battery consumption and so on. Whether performance differences are perceived as quality differences depends on the user and in some cases on the attribute. In case of camera the shutter speed of some camera may be faster than in another. However this may not be seen as a quality aspect as for example shutter noise on the other hand can be felt as more quality related whereas quietness is a performance dimension that translates into quality. (Garvin 1984, 29). Karnes (1995, 217) has argued that for different products quality dimensions are categorized in different way. As an example in case of a T-shirt performance was categorized as the last dimension of product quality.

2. Features are the "bells and whistles" of the product. They supplement products basic functioning. In many cases primary product characteristics (performance) are hard to separate of secondary characteristics. (Garvin 1984, 29).

3. Reliability reflects the probability of equipment failing within a specific period of time. Mean time to first failure (MTFF), mean time between failures (MTBF) and failure rate per unit time. Reliability related measures listed above assume that product has been used for some time period and suit better for durable goods. (Garvin 1984, 31). Ahmed (1996, 40) has considered reliability as the most important dimension of product quality. His study evaluated different factors of reliability and concluded that increase in the reliability of a product directly impacts the product performance and quality. In Romero's (1997, 108) study on perceived product quality measure model (PPQM) flawlessness is equivalent with reliability.

4. Conformance dimension reflects to which extent product design and operating characteristics match pre-established standards.

Internal conformance is related to performance in production such as first-time-through, amount of re-work per units produced. External conformance can be measured with amount of service calls or with frequency of repairs under warranty. (Garvin 1984, 31).

5. Durability measures the lifespan on product. Technical durability means how much product can be used before it comes physically unusable. If repair is possible durability and the life span of products will have another economic dimension. With added repair option product's life evaluated by cost of repairs, personal valuation of time and inconvenience, down-time caused losses etc. Durability and reliability dimensions are closely linked together. Frequently failing product is likely to be scrapped earlier than more reliable one. (Garvin 1984, 31). Durability is widely recognized as an important quality dimension in quality literature. In Romero's PPQM model durability is listed as one of the four dimensions (Romero 1997, 106). Brucks et al. (2000, 361) have also listed durability in six dimension model.

6. Serviceability can be defined as speed, courtesy and competence of repair. Customer's perceptions of variables related to serviceability may in some cases be measured quite objectively whereas some variables are based on personal standards and are much more problematic to measure. Attributes to be measured are e.g. elapsed time before service is restored, timeliness with which service appointments are kept and frequency when service fail to resolve outstanding problems. Rapid repairs and reduced downtime are connected usually to higher quality and are less subjective. For example, question such as "I feel I was treated individually" and "Service was provided in professional manner" are examples of totally subjective views of service. (Garvin 1984, 32). Brucks et al. (2000, 358) point out about serviceability that information about serviceability is not necessarily accessible by the consumer before the purchase takes place.

7. Aesthetics is another of the most subjective dimensions together with following perceived quality. Aesthetics is product looks, feel, taste and smell.

All these are matter of personal judgement. (Garvin 1984, 32). Existing studies of quality related aesthetics and appearance mainly cover consumer products.

8. Perceptions of quality (perceived quality) can be subjective as is assessment of aesthetics. Consumers doesn't necessarily have all information of products attributes. Therefore they rely on indirect measures in comparison between different brands. As result products are evaluated less objectively and more over on their images, advertising or brand names. (Garvin 1984, 32). The term quality image instead of perceived quality is used in a study by Karnes (1995). As seen in Table 2. Brucks et al. (2000) have in their model transferred perceived quality into prestige dimension.

Garvin (1984) sums up that several of the introduced eight major dimensions involve measurable product attributes while others have more to do with individual preferences. Some of the dimensions are inherent and timeless while some may shift with changes in customer's preferences. (Garvin 1984, 32). Each of the eight dimensions of quality is focused mainly to some of the five quality definitions. As example product-based approach focuses on performance, features and durability. User-based approach focuses on aesthetics and perceived quality. Manufacturing-based approach focuses on conformance and reliability (Garvin 1984, 33).

Criticism of quality dimensions point out that dimensions were proposed but not empirically validated. For example, Brucks, Zeithaml and Gillian have noticed that it is necessary to establish empirically supported quality dimensions (Brucks et al. 2000, 360). As result of data collection and analysis six dimension model was introduced in the work by Brucks et al. (2000). These dimensions and how they match with Garvin's dimensions is described in Table 2.

Table 2. Comparison of six dimensional model (Brucks et al. 2000, 361) and Garvins (1984) original model.

Six dimensional model	Explanation	Garvin's model
Ease of use	Consumer's ability to operate the product. Clarity of instrumentation and instructions.	-
-		Conformance
Versatility	Number and complexity of the characteristics that distinguish the model or brand from stripped-down model. Extra characteristics enable the product to perform more functions.	Features
Durability	The length of time the product lasts and works properly and how well product holds up under adverse conditions.	Durability
Serviceability	Ease of obtaining repair service (service center or self-service), responsiveness of service personnel and reliability of the service.	Serviceability
Performance	How well the product does what it is supposed to do consistently. Consistency can be referred to as reliability or dependability.	Performance and reliability
Prestige	How well product communicates superiority to purchaser and relevant social groups. Visible inherent characteristics of the product e.g. appearance. Also less tangible social component reflected in the product or brand's image.	Perceived quality (image) and aesthetics

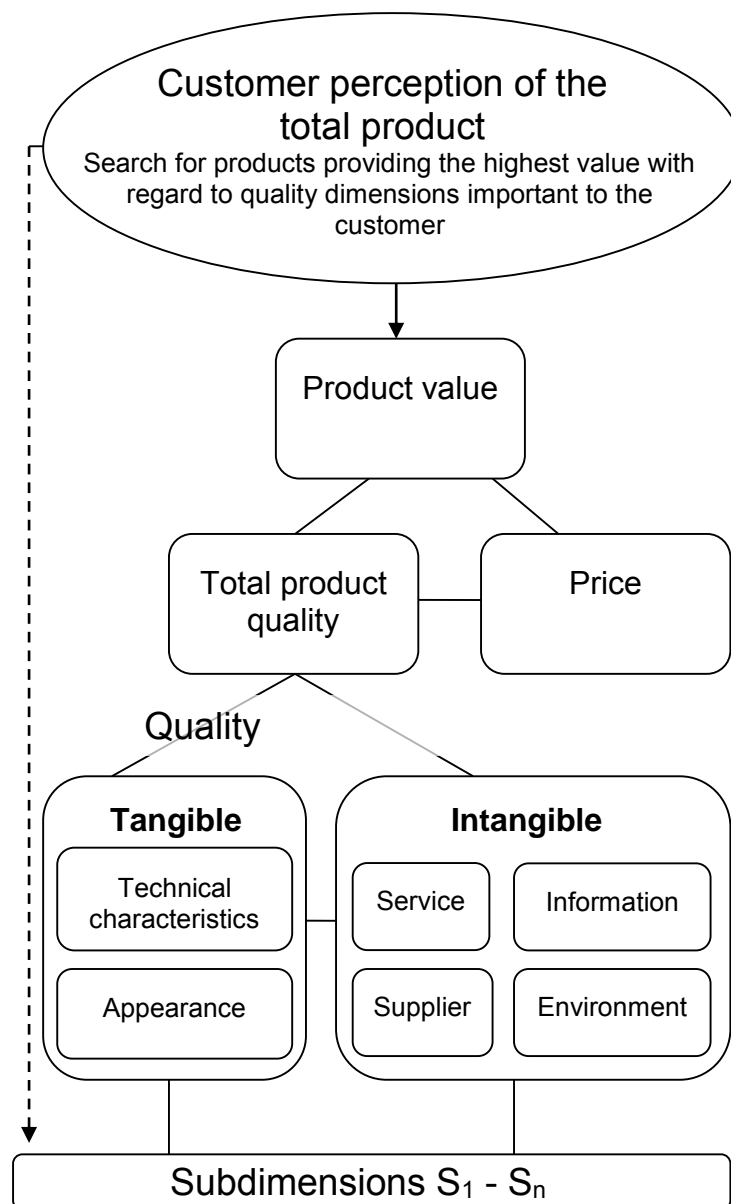
Developers of six dimensional model in Brucks et al. (2000) imply that the importance and relevance of each dimension vary across product category. They expect consumers to feel some dimensions of quality more important than others (Brucks et al. 2000, 362).

Reducing the numbers of dimensions is not the only option. Kianpour et al. (2013) suggest that a new environmentally friendly dimension would be added to the original list of eight.

Results of their study indicates that environmentally friendly is valued as a dimension along the other dimensions (Kianpour et al. 2013, 547).

4.3 Total product perception

As introduced earlier, consumers are expected to act rationally and choose a product that offers highest value for them with certain financial resource/input. Following model by Toivonen (2011) in Picture 7. illustrates the relationship of quality/price/value and then sub-dimensions of tangible and intangible quality dimensions.



Picture 7. A hierarchical model of product quality (Toivonen 2011, 29).

Quality dimensions have been divided into two sections: tangible and intangible. Research of a business customer value network (BCVN) (e.g. Albadvi & Hosseini 2011) lists examples of tangible and intangible dimensions related to relationship between B2B customer and company. Following value exchange Table 3. lists typical tangible and intangible examples from B2B relationship between companies in automotive industry.

Table 3. Tangible and intangible dimensions (Albadvi & Hosseini 2011, 509).

Tangible

Goods	Received parts and components, returned parts and claims, scrapped parts.
Services or saleable knowledge	Part and component orders, technical assistant services, guarantee report, engineering changes information, parts tracking management, new product announcement.
Revenues	Payments of delivered parts, claims and guarantee costs.

Intangible

Non-saleable knowledge	Sales data, product knowledge, qualitative and quantitative feedback, engineering experience
Benefits	Sense of community, loyalty, supply promise, offered price, order volume (economy of scale), order variety (economy of scope), quality feedback.

Comparison of dimensions has one significant difference to other research on similar topic. It places services to the side of tangibles. The reason for this lies in the categorization in this particular study. Services and saleable knowledge in this category are related to some tangible output.

4.5 Service quality in business-to-business environment

Services are part of intangible quality dimensions illustrated in Picture 7. Services differ from goods by four features intangibility, inseparability, heterogeneity and perishability (Molinari et al. 2008, 363). Closer look to these differences is made in Table 4. It suggests results or examples for each attribute that services have.

Table 4. Services and goods comparison (Zeithaml & Bitner 1996, 19).

Goods	Services	Resulting implications
Tangible	Intangible	<ul style="list-style-type: none"> • Cannot be inventoried, patented, readily displayed and their pricing is difficult.
Standardized	Heterogeneous	<ul style="list-style-type: none"> • Delivery and customer satisfaction depend on employee actions. • Quality depends on many uncontrollable factors.
Production separate from consumption	Simultaneous production and consumption	<ul style="list-style-type: none"> • Customers participate in and affect the transaction. • Employees affect the service outcome. • Mass production is difficult.
Nonperishable	Perishable	<ul style="list-style-type: none"> • Supply and demand synchronization is difficult. • Cannot be returned or resold.

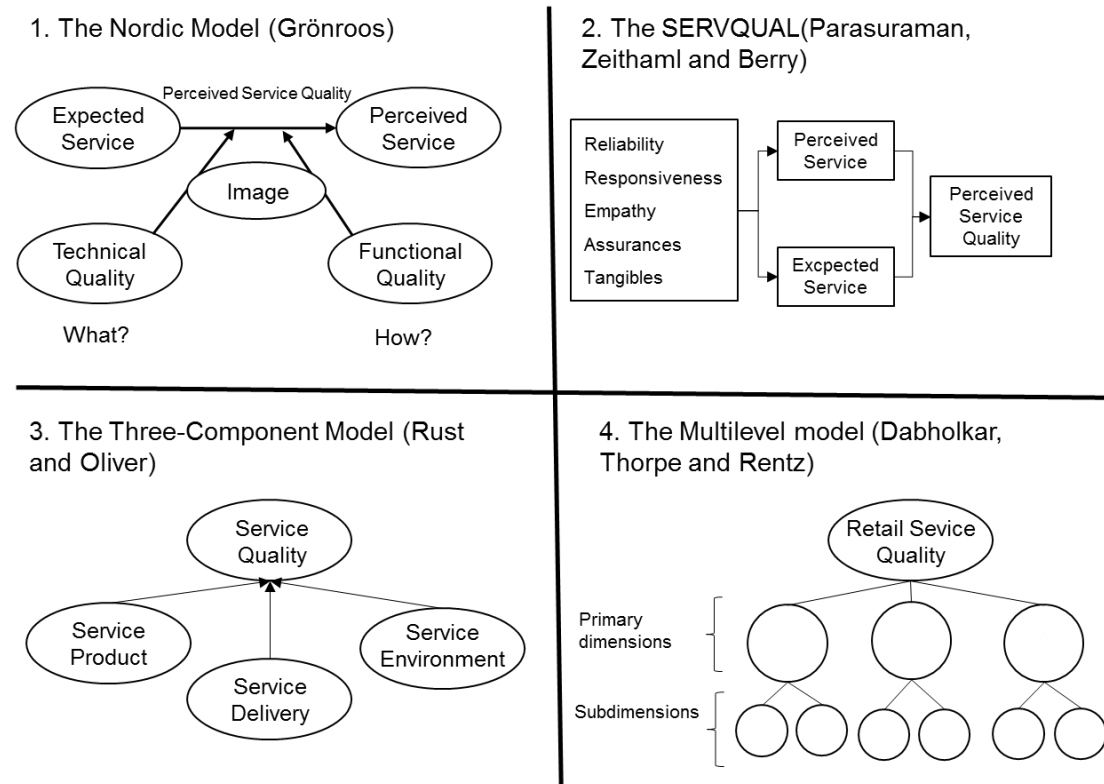
It is also noted in Table 4 that one key distinction between goods and services is that customers gain value from services without getting ownership of any tangible element (Lovelock 2001, 11). Having said that, this is not always the case found in practice. As in case of this study there are e.g. B2B markets where installation and repairs of equipment both take place. In cases such as technical field service the service may involve installation of equipment, training on operation or applications, equipment performance validation, preventive maintenance or equipment repairs including parts replacement (Fehl 2006, 2). Also in service literature it is implied that services tend to be more intangible than manufactured products (Zeithaml & Bitner 1996, 5).

Having high level of service quality is without a doubt an asset for an industrial company. Service quality studies in industrial B2B sector have confirmed positive relation between service quality and customer satisfaction and customer's loyalty to the company (Liao 2012, 92). The foundation of service quality theory lies in product quality which was introduced in the chapters above. Service quality concept rose to attention in early 1980s with the writings of scholars such as Grönroos, Lehtinen and Lehtinen, Lovelock and others (Fehl 2006, 14). Because of the intangibility of service the measurement of service quality is far from standardized and debate continues in the literature regarding the measurement of service quality perceptions (Brady & Cronin 2001, 12). Development of the SERVQUAL performance – expectations gap model tool and its further refinements has played important role in establishing an instrument for the evaluation of perceived service quality (Fehl 2006,14).

Although criticized, the SERVQUAL model is so far much used and operationalized in service quality literature. SERVQUAL is used to measure the gap between customer expectations and perceived service quality. Most of the SERVQUAL studies have been conducted in end-consumer based industries such as retail, travel, insurances and banking (Fehl 2006, 3). The rise of e-commerce has brought more criticism on the model.

One study argues that in computer mediated service encounters other than SERVQUAL based theoretical constructs, models and survey items have greater salience and explanatory power (Tate & Everman 2010, 60). This study claims that SERVQUAL and the gaps model do not accurately represent service interactions in an online context (Tate & Everman 2010, 82). Yet in more traditional environment the model has recently been in use. Fatima and Razaque (2014) have used modified SERVQUAL model in a study made in banking sector. Zhang and Hou (2013) have introduced SERVQUAL based scale to be used in supply chain industry which is also applicable in B2B environment. Many researchers have contended that SERVQUAL can't be generically replicated in studies across different industries. As proved by earlier examples and despite the noticed downsides SERVQUAL can be modified to be used in industrial B2B environment (Fehl 2006, 3).

Main conceptualizations of service quality are introduced in Picture 8. Perhaps the most well-known SERVQUAL is primarily focused on the process aspects of the quality. The Nordic model adds technical/outcome related aspects and the Three-Component Model service environment in their service quality models. Some Nordic model studies include B2B aspects. As an example Athanassopoulos (1997) has studied differences between individual and business customers of financial sector using framework based on Nordic model.



Picture 8. Perceived service quality conceptualizations (Brady & Cronin 2001, 32).

Three main conceptualizations of service quality are SERVQUAL, the Nordic Model and the Three-Component Model (Fehl 2006, 11). This study will utilize aspects from SERVQUAL and from the Nordic Model. Both models are introduced in following chapters.

4.5.1 SERVQUAL

It has been argued that the overall perceived service quality level is not determined solely by the performance level of the technical and functional quality dimensions (as perceived by the Nordic model), but rather by the gap between the expected and the experienced service quality. Parasuraman et al. identified dimensions that customers use in forming expectations about perceptions of service quality.

Original ten dimensions introduced in mid-1980's were later reduced to five by using factor analysis.

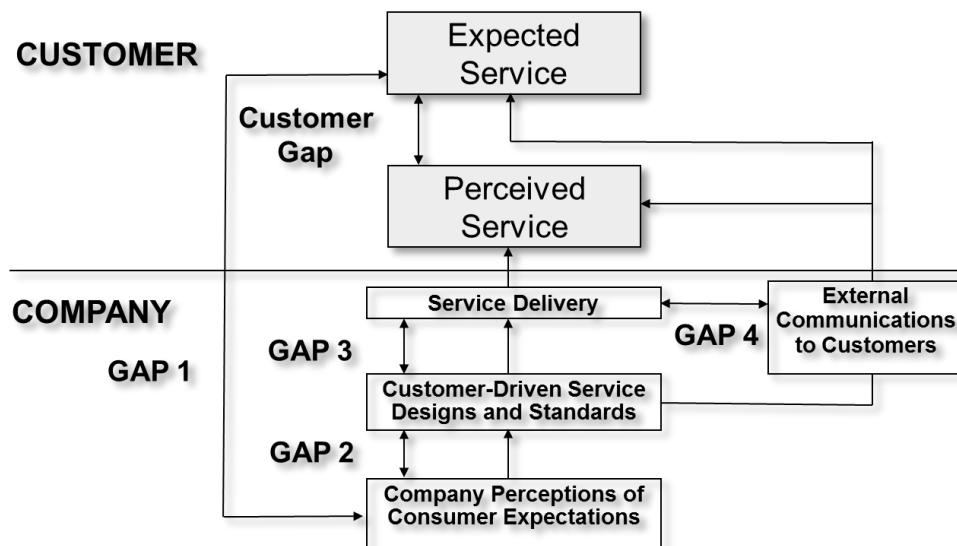
According to FehI (2006, 22), these dimensions are:

- Tangibles: Physical facilities, equipment, and appearance of personnel.
- Reliability: Ability to perform promised service dependably and accurately.
- Responsiveness: Willingness to help customers and provide prompt service.
- Assurance: Knowledge and courtesy of employees and their ability to inspire trust and confidence.
- Empathy: Caring individualized attention the firm provides its customers.

SERVQUAL literature (Zeithaml et al. 1996, 37-38) introduces a questionnaires based on these five dimensions and illustrates how to utilize them in customer gap evaluation. Overall SERVQUAL is based around five pivotal gaps in delivering services:

- Customer gap (gap 5): Difference between expectations and perceptions.
- Provider gap 1: Not knowing what customer expect.
- Provider gap 2: Not selecting the right service designs and standards.
- Provider gap 3: Not delivering to service standards.
- Provider gap 4: Not matching performance to promises.

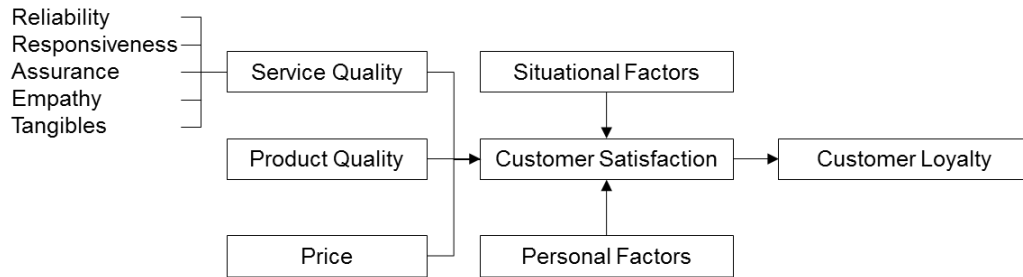
Picture 9. introduces the line between customer and company and the five different gaps between each stage in delivering services. Gap 5 known as the customer gap is the only one which is not linked directly between customer and the company. In order to improve quality of company's service all the gaps needs to be closed.



Picture 9. Gaps model of service quality (Zeithaml et al. 2006, 46).

Seeing the gap model framework as service process one can say it starts from the drawing board at the bottom of the company. This process then moves from bottom to the top and materializes in the form of customer gap. One way companies use gaps model is to search for evidence of each gap in their service organization and then to close them whenever possible (Zeithaml et al. 1996, 48).

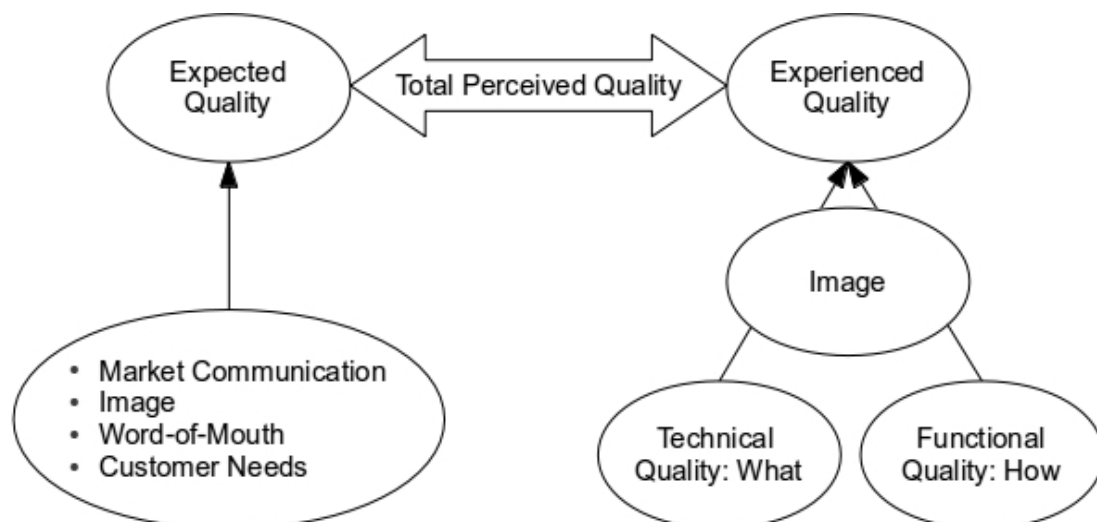
In SERVQUAL context the quality dimensions relate to service quality which together with other variants are related to customer satisfaction (see Picture 10). Researchers have differentiated service quality and customer satisfaction concepts. Although they have some things in common satisfaction is generally viewed as a broader concept. Keeping SERVQUAL's point of view in mind service quality focuses on dimensions of service. As a summary perceived service quality is a component of customer satisfaction (Zeithaml et al. 2006, 106).



Picture 10. Quality and satisfaction and service quality relation (Zeithaml et al. 2006, 107).

4.5.2 The Nordic Model

In the Nordic model of service quality developed by Grönroos (1990, 2003) total perceived service quality is seen as subjectively evaluated processes where production and consumption takes place at the same time. These situations are called moments of truth (Grönroos 2003, 100). Eventually the customer compares specific expectations of quality with the experienced quality (see Picture 11). Expected service is influenced by the marketing of the service provider and external factors word-of-mouth, corporate image and customer needs (Grönroos 1990, 66).



Picture 11. The Nordic Model (Grönroos 1990, 66).

Final quality of the company is good when it meets the expectations of the customer. In other words the expected quality. If expectations are unrealistic the experienced quality is low although the produced quality measured in some objective method is adequate (Grönroos 1990, 65).

In the Nordic model outcome is expressed as the technical quality of the service. It can be assessed by the customer like the technical dimensions of a product. Technical quality alone cannot account for the quality as perceived by the customer. Customers are also interested in how the service is provided. This other process dimension that customers are interested is called functional quality of the service (Grönroos 2003, 100). Third quality dimension in the model is the image of the service provider. Public image of the service provider appears in both sides of the total perceived quality equation as it is also considered to moderate expected quality. The importance of image in customer perception is discussed in the following chapter.

4.6 Company image and brand

Image is critical for any company in two ways. Favorable image may allow company to do minor mistakes that customers forgive. A negative image can result in mistakes to be perceived as magnified or as bigger than they are. (Grönroos 1988, 11). Image has at least three-level purpose:

- Image communicates expectations.
- Image filters perceptions.
- Image is dependable of expectations and experiences.

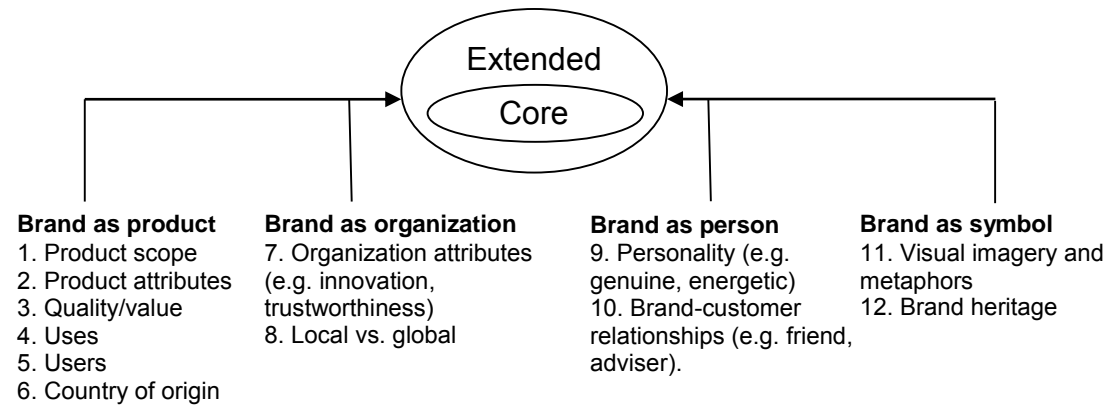
First, image has an effect on expectations together with external marketing campaigns e.g. marketing and personal selling of the company. Secondly, image helps people to filter information. Both oral and marketing communication. As a filter image effects on prevailing perceptions of company's operations. Technical and functional quality are seen through this filter (Grönroos 2000, 387).

Existence of image factor effecting as a modifier between functional quality and overall service quality has been proved in a study linking service quality with customer satisfaction (Fehl 2006, 44). Good image offers protection against minor or even seldom occurring major technical or functional problems. If problems remain the shield disappears and image has changed. Thirdly, image depends on customer's experiences and expectations. Perceived service quality changes the image and makes it stronger or weaker. If image is not clear for customer it will be formed based on their experiences. Fourth dimension of image can be understood as the internal effect. The more unclear the image is the more it effects on the attitudes of the employees towards the company. This may have effect on the quality of service (Grönroos 2000, 388).

In business environment image is usually communicated by using brands. Customers have expectations of the brand which affect to their quality perceptions. Perceived quality then again has an effect on the probability of re-purchase. (Karlöf 1999, 218). Wider perspective of brand was introduced in 1996 by David Aaker. According to Aaker (1996, 63) brand has three functions: to distinguish products from each other, to show the product origin and to provide a guarantee of quality, value and performance. Aaker (1996) makes difference between brand image and identity. He advises to go beyond to the brand image. Image is considered as useful background information of how customers and others perceive the brand. Image is usually passive and looks back how the brand is perceived. Going beyond this means building brand identity. Brand identity should reflect the desired associations for the brand. It should reflect company's business strategy that offers the competitive advantage for the company. Therefore brand identity answers the question how strategists want brand to be perceived (Aaker 1996, 71).

Aaker (1996) continues to point out that brand identity provides it with direction, purpose and meaning. Brand's core identity is its foundation and remains constant. Extended identity includes psychological and physical aspects giving brand nuance and texture.

Brand identity is gathered in 12 dimensions that are grouped around four distinct brand perspectives (Aaker 1996, 79) as shown in Picture 12. These four perspectives are 1. brand as product, 2. brand as organization, 3. brand as person and 4. brand as symbol.



Picture 12. Brand identity (Aaker 1996, 79).

Half of the dimensions in Aaker's brand identity model are located in the product perspective group. From this study's perspective the most relevant dimension are 1. product scope, 2. product attributes, 3. quality/value, and 10. brand-customer relationship. Perceived quality can thus be highlighted from these dimensions. It is seen as the only brand association that drives firm profitability (Aaker 1996, 249).

Product attributes provide basics for value proposition. Brand may have distinctive attributes such as robustness, on-time delivery etc. that have associations with the brand. Brand-customer relationship is related to relationship between brand and customer. Companies with strong brand can be seen as friend that customer can count on. In such cases brand-customer relationship is likely to be much deeper and long-lasting than in case where brand identity is based primarily on product attributes (West et al. 2006, 241).

4.7 Summary of introduced perceived product quality research

Models that were introduced in earlier chapters of this study are summarized in the following table. Table 5 issues author(s) and scope of the model in the order models were introduced in this study.

Table 5. Comparison of product quality models.

Author	Garvin (1984)	Brucks et al. (2000)	Parasuraman et al. (1988)	Grönroos (2003)
Scope	Tangible products	Tangible products	Services	Services
Attributes	Durability Performance Appearance Features Serviceability Conformance Reliability Perceived quality	Versatility Durability Performance Ease of use Serviceability Prestige	Reliability Responsiveness Assurance Empathy Tangibles	Functional Technical Image

5. DATA AND METHODS OF THE STUDY

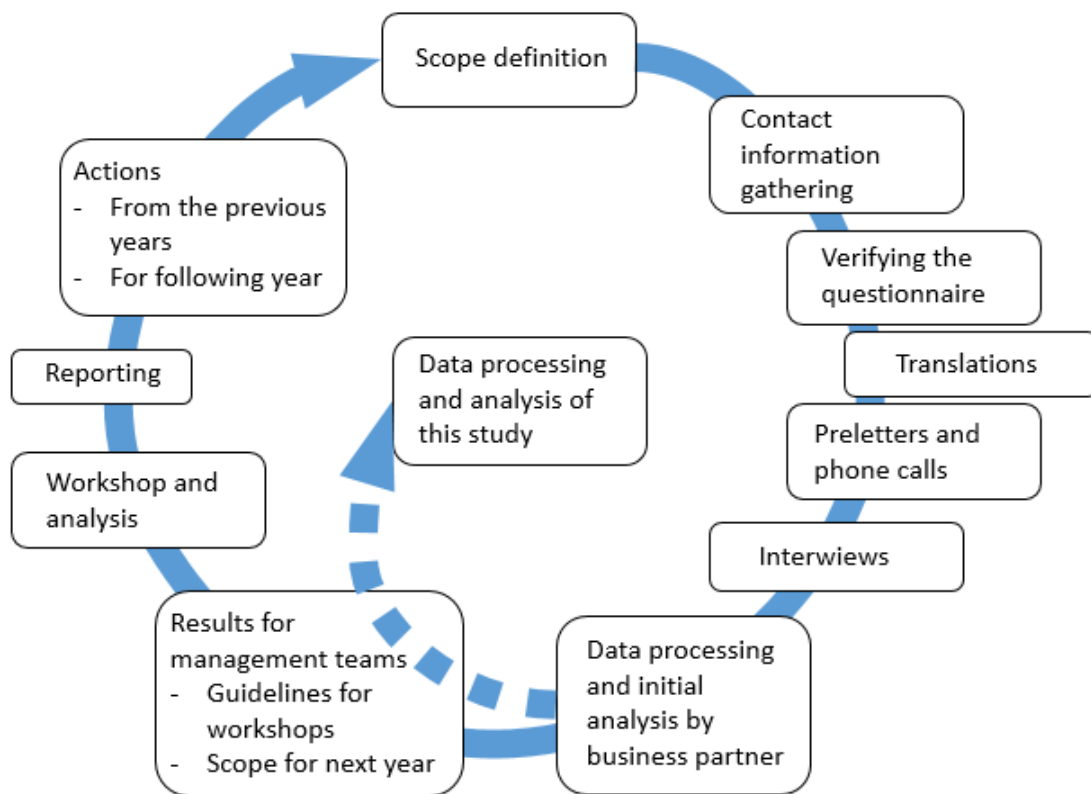
5.1 Data collection

Using the data collected in the real life context of customer survey by Metso provides the possibility to investigate what effects customers' supplier selection, what are customers' perceptions about Metso's image and operations and how loyal and committed customers are. The same datasets are used to benchmark Metso's performance against competitors, but this is not in the scope of this study.

Metso collects perception study data in order to:

- Explore how company is perceived by customers in comparison to competitors.
- To see what are its competitive edges and challenges in relation to competitors.
- To test its understanding and beliefs about customer's future needs in strategic focus areas, geographical areas and customers focus areas.
- For developing business operations and fine-tuning the strategy.

Data for customer perception studies are collected on annual basis. Data collection follows the cycle introduced in Picture 13. Cycle also illustrates the steps that this study utilizes. Those steps take place before the line that spins of the cycle.



Picture 13. The annual cycle of perception study.

Scope of perception study is defined using management's wishes and expectations. After that contact information is gathered from key account managers and regional representatives. Phone interviews based on contact information are conducted mostly in native language. Customer perception study interviews for this study were made between August and September 2011. Data was collected from Power and Automation segment customers. Of the two customer segments pulp and paper customers were customers of Automation segment and respectively power generation customers were customers of Power segment.

Altogether 72 answers were received from three different pulp and paper customers that were Chenming, International Paper and Mondi Business Paper. Power customers were interviewed from five different countries. Respondents include consultants as well as management, purchasing, technical, operation, and maintenance people. Regionally answers were distributed as seen in Table 6.

Table 6. Power customers regionally.

Country	Names provided/ interviews completed	Companies interviewed
Germany	89/16	4
Poland	73/35	20
Sweden	63/25	17
Switzerland	2/0	1
UK	73/25	8

In the final dataset total of 97 interviews were used for analysis. These answers came from employees representing 52 different companies. After data was processed for this study there were 56 respondents from pulp & paper customers and 41 respondents from power generation customers. Original questionnaire had six values scale. This scale was converted into five values scale for the purpose of this study.

5.2 Operationalization of quality, service quality and brand image related questions of the survey

Following chapter gathers survey questions related to theoretical concepts introduced in earlier chapters. The order is following: quality dimensions, service quality dimensions and finally brand identity dimension. Firstly out of Garvin's eight quality dimensions this study's main focus is on the aspects that are listed in Table 7, followed by SERVQUAL in Table 8, Nordic school in Table 9. Links between perception study questions and Aaker's brand identity dimensions are listed in Table 10.

Table 7. Garvin's and six dimension quality dimensions operationalized in questionnaire.

Garvin	Six dimension model	Related question
Features	Versatility	Q2 Innovative products and services Q9 Local capabilities
Reliability	Performance	Q10 Product reliability
Serviceability	Serviceability	Q3 Flexibility Q5 Availability to you Q9 Local capabilities (for example sales, service and technical support)
Perceived quality	Prestige	Q8 Project execution Q10 Product reliability

Table 8. SERVQUAL model dimensions.

SERVQUAL dimension	Question
Reliability	Q4 Reliability as business partner
Responsiveness	Q6 Actively proposing solutions Q7 Capability to take action
Assurance	Q1 Easy to do business with
Empathy	Q5 Availability to you Q3 Flexibility
Tangibles	Q2 Innovative products and services

Table 9. Nordic model dimensions.

Nordic model dimension	Question
Functional: how	Q1 Easy to do business with Q3 Flexibility Q4 Reliability as business partner Q5 Availability to you Q6 Actively proposing solutions Q7 Capability to take action Q8 Project execution Q9 Local capabilities
Technical: what	Q2 Innovative products and services Q10 Product reliability Q11 Product portfolio

Table 40. Aaker's brand identity dimensions operationalized in questionnaire.

Brand identity dimension	Question
2. Product attributes	Q10 Product reliability,
3. Quality/value	Q13 Value for the money
7. Organization attributes (e.g. innovation, consumer concern)	Q2 Innovative products and services Q3 Flexibility Q4 Reliability as partner Q5 Availability to you Q6 Actively proposing solutions Q7 Capability to take action Q8 Project execution Q9 Local capabilities

5.3 Methods and statistical analysis of the study

Statistical analysis tests have been selected to test hypothesis according to Table 11. IBM SPSS statistics 21 was used for testing. Numerical variables in questionnaire follow five point Likert's scale from 1= not at all important to 5= very important.

Table 51. Study questions.

Study question	Method of statistical analysis
What are the similarities and differences between Automation and Power segment customer perceptions?	Non-parametrical tests: Mann-Whitney U test

Mann-Whitney U test is one of the most efficient statistical tests that is not dependent on normal distribution. As a non-parametrical test it doesn't have same pre-requisite for distribution or scale as parametrical tests have (Ranta et al. 1999, 193). In this study two analyzed groups are independent variables that are not normally distributed. Size of the samples and opinion scales suggest Mann-Whitney U test as most suitable alternative for statistical testing. Mann-Whitney can be used to find out differences in distribution of the samples. Null hypothesis can be based on situation and formed in various ways (Ranta, et al. 1999, 195).

5.4 Reliability and validity

Basic idea of reliability is that answers given for reliable questionnaire differ because respondents have different opinions not because questionnaire is confusing and ambiguous (SPSS 1999, 362). Reliability is the degree to which an assessment tool produces stable and consistent results which are accurate and not random. Reliability consists of two factors: stability and consistency. Measurements must be repeatable so that if re-measurements are done using original setup the results will be the same (Internet 2).

Stable measurement or method is not effected by random errors such as mood of respondents. Stability of questionnaire can be examined by comparing measurements done in timeline. Intervals between these repetitions should be optimized.

Interval must be long enough that participant can't remember earlier answers but on the other hand short enough so that changes in examined area do not take place. In many cases this way to measure reliability is not executable and poor reliability factor can be explained by real changes that have taken place as time has gone by (Wright 1979, 47). Measurements consistency in other words unity means that when questionnaire having multiple statements is split into two groups of statements both groups are measuring the same thing. In such case the correlation of total points from each group has high significance. As there's no outer criterion that tests the reliability of measurement "internal" criterion is used for testing reliability. Internal in this context meaning the measured group and the measurement itself (Procter 1998, 128). Internal reliability can be verified by re-measuring the same unit multiple times. External reliability means that measurements are repeatable in other situation and research (Heikkilä 2001, 187). Cronbach's alfa is commonly used for testing reliability in survey data, but it was omitted in this study as the aim was to test only group-wise differences not dimensionality of service quality and its measures.

A valid measurement is measuring what it is supposed to measure. When validity of the study is evaluated the aspects of content validity, concept validity and criterion validity are inspected (Internet 3). Content validity of this study is much related to the questionnaire and the use of questionnaire. According to Belson respondents may have misunderstood the questions or they answer like others expect them to answer and don't reveal their true opinions (Belson 1986, 195-196). Also it's possible that some abstract concepts and their content is not unambiguous (Carmines & Zeller 1979, 20-22).

Concept validity has not been calculated by statistical methods by the company that has executed survey for this study. In this data set, however, respondents had high level professional background and were experts in acting in a customer role, which is likely to improve the validity of their responds.

Table 62. Aspects of validity (Internet 3).

Validity aspect	Description	Evaluation
Content validity	Content validity means that the concepts used in study has been operationalized successfully according to prevailing theories.	Evaluation may be done by using expert evaluation
Concept validity	Concept validity indicates in which extent measurement measures the concept it is made to measure. Comparison is done to some existing well known and measurable concept.	Concept analysis, factor analysis, comparing results to earlier studies.
Criterion validity	Measured value is compared to some other value that acts as criterion for validity.	Evaluation is done by using correlation between test and chosen criterion.

6. RESULTS OF THE STUDY

Data from questionnaires was analyzed using IBM SPSS Statistics 21. Statistical test used for all of the questions was independent samples Mann-Whitney U Test since the data were non-normally distributed. Following results were found after Automation and Power were divided into own business types.

Table 73. Results of the data analysis comparing Automation and Power segments.

Question	Null hypothesis	Significance	Result
1	The distribution of Q1 Easy to do business with is the same across categories of Business type	,528	Retain the null hypothesis
2	The distribution of Q2 Innovative products and services is the same across categories of Business type	,588	Retain the null hypothesis
3	The distribution of Q3 Flexibility is the same across categories of Business type	,726	Retain the null hypothesis
4	The distribution Q4 Reliability as business partner is the same across categories of Business type	,631	Retain the null hypothesis
5	The distribution of Q5 Availability to you is the same across categories of Business type	,302	Retain the null hypothesis
6	The distribution of Q6 Actively proposing solutions is the same across categories of Business type	,243	Retain the null hypothesis
7	The distribution of Q7 Capability to take action is the same across categories of Business type	,504	Retain the null hypothesis

8	The distribution of Q8 Project execution is the same across the same across categories of Business type	,483	Retain the null hypothesis
9	The distribution of Q9 Local capabilities is the same across categories of Business type	,783	Retain the null hypothesis
10	The distribution of Q10 Product reliability is the same across categories of Business type	,688	Retain the null hypothesis
11	The distribution of Q11 Product portfolio is the same across categories of Business type	,096	Retain the null hypothesis
12	The distribution of Q12 Price level compared to other suppliers is the same across categories of Business type	,000	Reject the null hypothesis
13	The distribution of Q13 Value for money is the same across categories of Business type	,019	Reject the null hypothesis
14	The distribution of Q14 Likelihood to recommend Metso is the same across categories of Business type	,904	Retain the null hypothesis

Research question Q1 of the study was: what are the similarities and differences between Automation and Power segment customer perceptions? As a result of the statistical analysis, at 5 % level differences between two customer segments are found only in questions 12 and 13. Customers of these segments perceive the price level and value differently. Based on mean value, majority of Automation's customers perceive the price level to be more expensive whereas Power customers perceive Metso's price level to be as average. Automation's customers give relatively more importance to excellent and very good value for the money. Power customers have given no excellent values in this category. Question 11. Product portfolio (item 11) comes close to value 0,05 where null hypothesis could be rejected.

Research question Q2 was: do customer perceptions backup One Metso concept? The distribution in eleven question out of fourteen clearly suggest to retain the null hypothesis. Customer perceptions do therefore give support to existence of the One Metso concept. Rejected null hypothesis in questions 12 and 13 do not belong to any quality dimension categories introduced in chapter 5.2. Exception is found related perception of image and to brand identity. It's quality/value dimension is represented in question 13. where null hypothesis is rejected. Distributions of each question can be seen in Table 14.

Table 14. Distribution of questions.

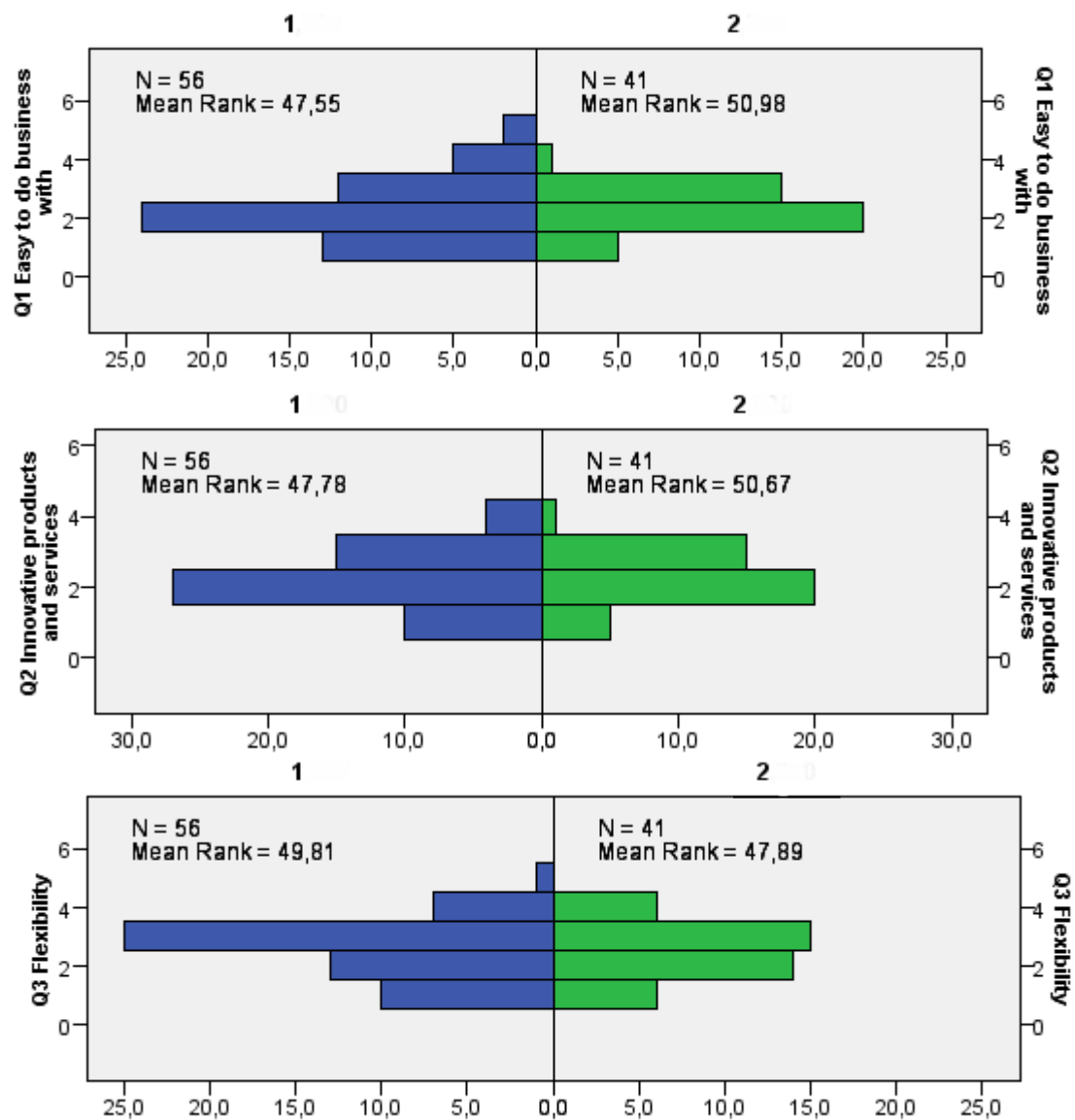


Table 14. Distribution of questions (continues).

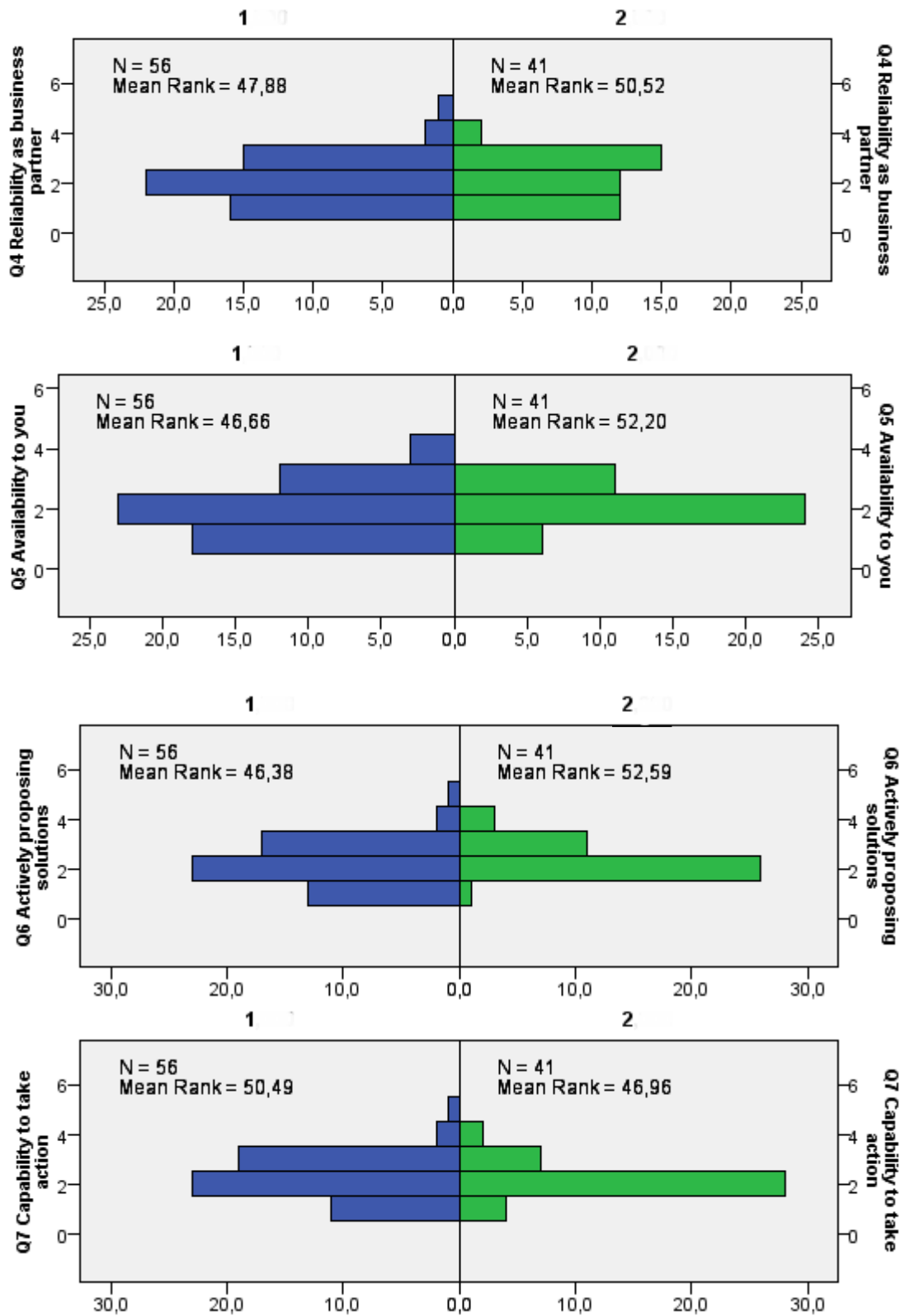


Table 14. Distribution of questions (continues).

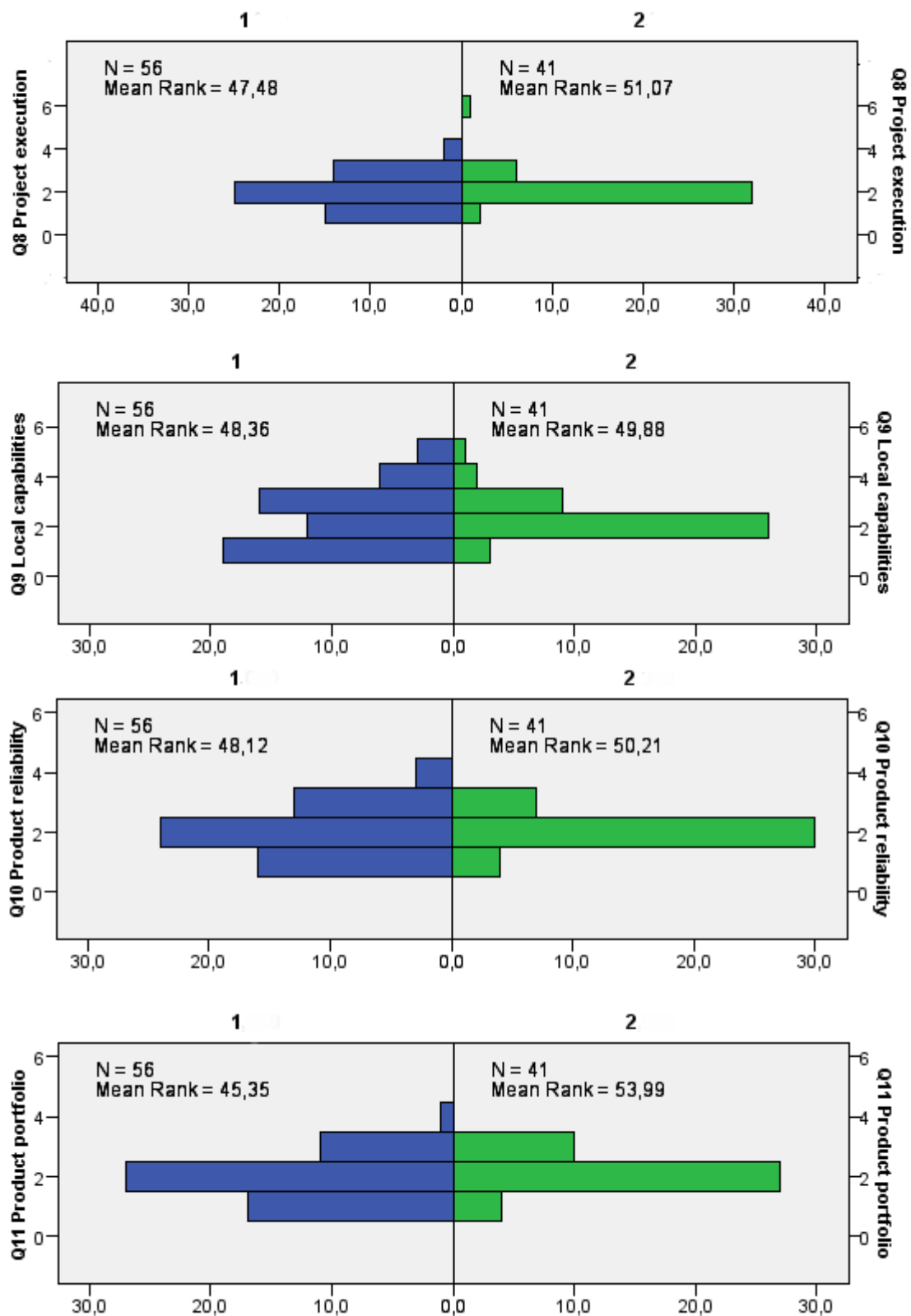
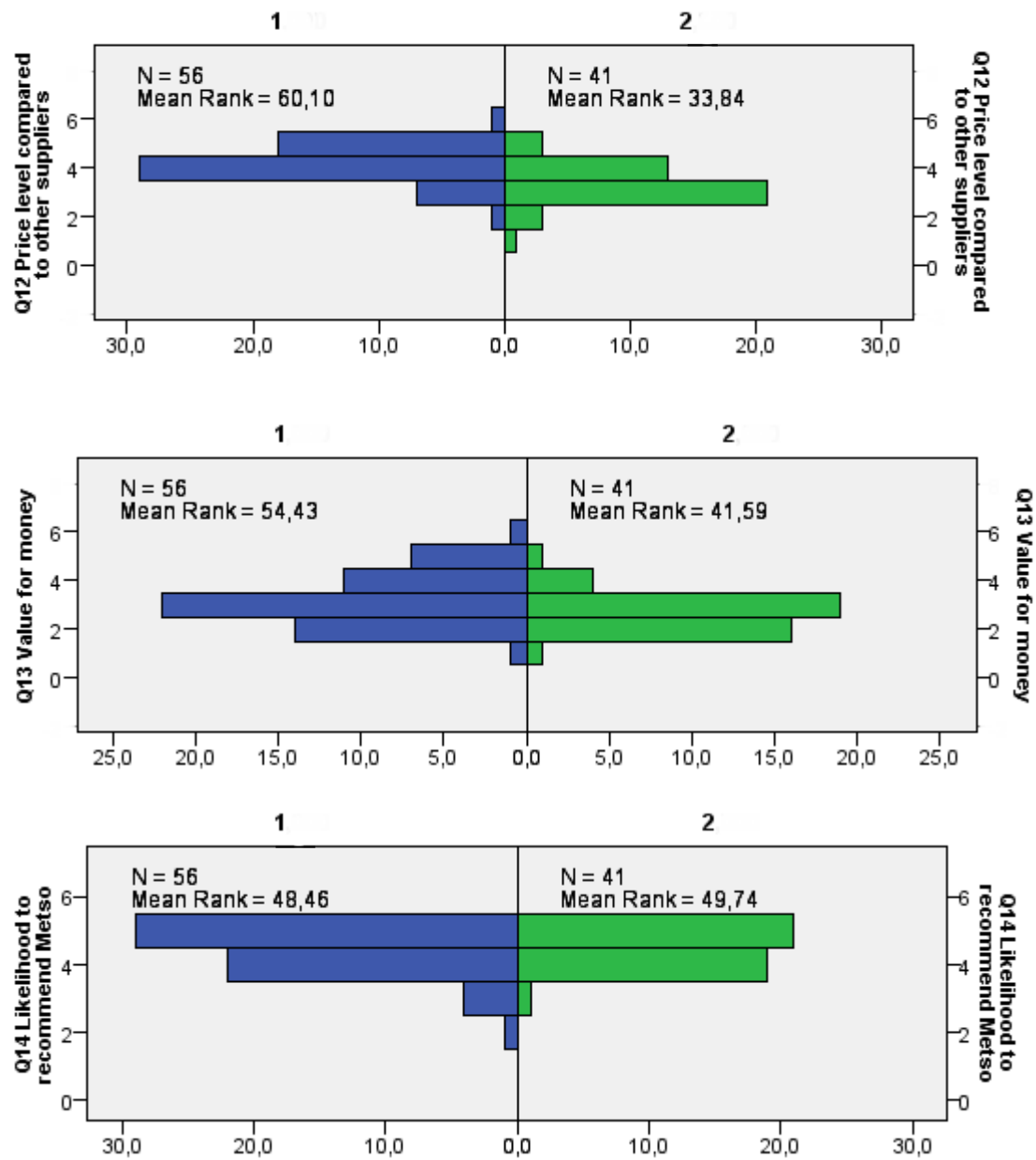


Table 14. Distribution of questions (continues).



7. CONCLUSION AND DISCUSSION

This study has introduced and discussed different theory models related to customer perception of service quality and image. Especially service quality research has earlier been focused on business to customer relationship but during the last decade increasing amount of B2B research has emerged. This study focuses on service quality and image aspects of Metso corporation by operationalizing existing service quality models. As a summary it is concluded that Metso's One Metso can be viewed as a successful concept to certain extent. Limitations of results are based on the fact that interviews were made with Automation and Power segments leaving other segments out of the scope. The remaining two other segments have also been part of One Metso concept. Between the two studied segments exceptions in perception are found from questions related to price level and value for the money. The studied segments have different product portfolios and pricing strategy and therefore this result is somewhat expectable. Overall results of One Metso cannot directly be generalized as they are closely linked to testing company's own concept. Results do add a new perspective for Metso's own use of the data from questionnaire. Keeping in mind that the company can follow a trend related to the data as customer perception study repeated in certain intervals. In general results of the study can possibly be used as reference in similar comparison between different customer segments. Image factor has also been part of this study. Image has not been common in earlier studies in B2B to business service quality literature. Image factor therefore offers reference to be used in other researches.

This study incorporates features from SERVQUAL and Nordic model which both have been subjects of earlier studies mostly separately. In unified model introduced by Fehl (2006) both process related aspects of SERVQUAL and Nordic model related process outcome aspects are taken into account in B2B environment. Outcome quality's criticality is mentioned as malfunction of customers equipment can pose a significant financial impact on the customer. According to Fehl's study SERVQUAL instrument which includes outcome quality can be created and used successfully.

This study's questionnaire links service quality questions and different quality dimensions introduced in quality literature. Overlapping with SERVQUAL and outcome quality is seen in multiple questions. Factor analysis on current set of questions could reveal new aspects from customer perceptions. This data could give direction for re-designing a new questionnaire and allow the new design to have noticeable theoretical background.

Limitations of this study are related to the set of questions in the questionnaire. Questionnaire was not originally made for this study's purpose in mind. Based on perceived limitations a further research on the topic with questions focusing more closely on service quality and image dimensions with the existing segments of Metso would be preferable. As customer perception data is available from earlier years some elements of the questionnaire could still be used for evaluating "new One Metso" remaining after demerger of Valmet. This study would be done in corporate level.

Besides the corporate level approach survey results might be wise to share in business line and regional level. This would give managers possibility to identify dimensions where gaps exist in performance and on the other hand areas where they have succeeded. Future research might take the different product portfolios and product strategies into consideration. With current more focused portfolio that Metso offers this new questionnaire could be more indepth with each quality dimension and customer segment. For example in case of Metso Flow Control customer groups might be selected between Oil&Gas and Pulp&Paper customers. Further on customer categorization as day-to-day, project or service business customers would allow results to be used more specifically by different parts of organization. If possible customers could name the main product they have purchased from Metso. This selection is valid also in case of services as services could be also sub-categorized to maintenance services, spare parts services, shutdown services etc. Lastly customer satisfaction questionnaire is expected to be carried out by a company with certified quality management system. Well designed survey can be used to serve this purpose.

APPENDIX

Scales from following questionnaire were re-coded for the purpose of this study.

Metso Customer Perception Study 2011

FINAL

THIS FONT IS USED TO INDICATE INSTRUCTIONS FOR THE INTERVIEWER

INTRODUCTION WHEN BOOKING

Good morning/good afternoon!

Good morning/afternoon, I am calling from ... and my name is ... We are currently conducting customer research for Metso. This study deals with your expectations for suppliers of power generation equipment like boilers, flue gas cleaners, automation systems, and related services. You may recall receiving a letter concerning this survey.

This interview is confidential. Your name will be attached to your answers only with your consent.

IF NECESSARY: For further information you can contact (SEE CUSTOMER LIST) at Metso.

The interview takes approx. 20 minutes. Is this a good time for you, or would you prefer that I call back another time? ARRANGE CALLBACK.

RECORD

Respondent's ID-no (see customer list): _____

Respondent's name: _____

Company: _____

Country: _____

APPENDIX

If some of the questions don't apply to your area of expertise, please let me know and we will proceed to the next question. First questions relate to supplier selection.

2. METSO COMPANY IMAGE AND OPERATIONS

How would you rate Metso in terms of the following image factors?
 READ ALTERNATIVES 1-5 IF NECESSARY.

	Excellent	Very good	Good	Fair	Poor	Don't know/ rather not say
Q1 Easy to do business with	1	2	3	4	5	6
Q2 Innovative products and services	1	2	3	4	5	6
Q3 Flexibility	1	2	3	4	5	6
Q4 Reliability as business partner	1	2	3	4	5	6

How would you rate Metso's operations?
 READ ALTERNATIVES 1-5 IF NECESSARY

	Excellent	Very good	Good	Fair	Poor	Don't know/ rather not say
Q5 Availability to you	1	2	3	4	5	6
Q6 Actively proposing solutions	1	2	3	4	5	6
Q7 Capability to take action.....	1	2	3	4	5	6
Q8 Project execution	1	2	3	4	5	6
Q9 Local capabilities (for example sales, service and technical support)	1	2	3	4	5	6
Q10 Product reliability	1	2	3	4	5	6
Q11 Product portfolio.....	1	2	3	4	5	6

3. PRICE AND VALUE FOR MONEY

	Very low	Low	Average	Expensive	Very Expensive	Don't know/ rather not say
Q12 Compared to other suppliers, would you consider the price level of Metso's Power generation equipment and services as... READ ALTERNATIVES 1-5 AND REPEAT IF NECESSARY.	1	2	3	4	5	6

	Excellent value for money	Very good value for money	Good value for money	Fair value for money	Poor value for money	Don't know/ rather not say
Q13 Would you say that Metso offers	1	2	3	4	5	6

READ ALTERNATIVES 1-5

APPENDIX

4. LOYALTY AND COMMITMENT

NOT ASKED FROM CUSTOMERS, WHO HAVE NOT MENTIONED METSO AS A SUPPLIER IN Q1A

Next I have a few questions concerning your relationship with Metso.

Q14 How likely is it that you would recommend Metso?

10 = Extremely likely

9

8

7

6

5 = Neutral

4

3

2

1

0 = Not at all likely

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