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Calculation Model of Service Business Potential -

Case LKI Käldman Ltd.

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Thesis abstract

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The purpose of this research was to investigate the potential business opportunities and find out whether the current service pricing is in the right level.

The theoretical part deals with service and pricing. The goal is to clarify the concept of value pricing by recearching studies made by authentic researchers. The theoretical part also discusses what service business is and look into value pricing in more details.

The study material for the empirical part of this thesis, was collected by interviewing ten customers selected carefully using the criteria that 1) customer has used service earlier and 2) is having an LKI loading or unloading device. The interview tour took place in June and August 2012, and it was made by face to face interviews. The interviewees were also contacted and study was introduced by email beforehand to remind them of the study.

The results of this research can be used for calculations and development ideas when planning next and coming years action plan and strategy for the LKI Käldman Ltd Services business area. The result will be calculations about estimated service business potential in Finland in LKI loading and unloading devices and also Amada punching, shearing and press brake machines. In this thesis was found out that current service pricing in LKI Services is in right level and there is a remarkable service potential to be utilized in Finland.

Keywords: Service, Value pricing, Value, Service Business

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Opinnäytetyön tiivistelmä

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Tämän tutkimuksen tarkoituksena on selvittää huollon liiketoiminta potentiaali sekä selvittää onko nykyinen palveluhinnoittelu oikealla tasolla.

Teoreettinen osa käsittelee termejä palvelu ja hinnoittelu. Tavoitteena on selventää arvohinnoittelua käyttäen apuna tutkijoiden tekemiä teoreettisia tutkimuksia. Teoriaosuus käsittelee myös mitä on palveluliiketoiminta ja arvohinnoittelu.

Empiirisen osuuden tutkimusmateriaali kerättiin haastattelemalla kymmentä asiakasta, joiden valintakriteereinä käytettiin että heillä on LKI:n lastaus- tai purkulaite je että he ovat käyttäneet huoltoa aiemmin. Haastattelut toteutettiin kesäkuussa ja elokuussa 2012, ja ne olivat kasvokkain tehtyjä haastatteluja. Haastateltaviin otettiin yhteyttä ennen haastatteluajankohtaa sekä esiteltiin sähköpostin välityksellä mistä tutkimuksesta on kysymys.

Tutkimuksen tulokseen perustuen laskelmia ja kehitysideoita tullaan käyttämään kun LKI Käldman Ltd. suunnitelee tulevan sekä tulevien vuosien palveluliiketoiminnan toimintasuunnitelmaa ja strategiaa. Tutkimuksen tuloksena on laskelmat arvioidusta palveluliiketoiminnan potentiaalista Suomessa keskittyen LKI lastaus-ja purkulaitteisiin sekä Amadan levyntyöstö-, kulmaleikkuri- ja särmärikoneisiin. Tässä tutkimuksessa myös saatiin selville, että nykyinen palveluhinnoittelu on oi-kealla tasolla LKI Services –osastolla ja että Suomessa on merkittävä Service potentiaali hyödynnettävissä.

Avainsanat: Palvelu, Arvohinnoittelu, Arvo, Palveluliiketoiminta

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ABBREVIATIONS

ASIIMP Automatic storage with loading and unloading

ASL Automatic Storage with Loading

AS LUL Automatic Storage with Loading and Unloading Device

CS Compact Storage

FMS Flexible Manufacturing System

FO Flying Optics

MP Manipulator (Loader/Unloader)

LIII Loader (Generation III)

Laser Cell

OEM Original equipment manufacturer

PC Personal Computer

PR Part remover

PRIII UL Part remover with Unloading (3rd generation)

SME Small and Medium Enterprises

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1 INTRODUCTION

This section describes the purpose of the research and presents the case company.

1.1 Selection of topic

A possibility opened to make my final thesis in the MBA programme to LKI Käldman Ltd. when contacted the company. Topic is to me very interesting and familiar, because I have been working with similar duties when working for Prima Power.

When talking about Service Business generally, there are a lot of big suppliers and companies who has chosen as their strategy, that it includes service as one as main points to be taken into account. For example Kone sells its elevators as complete packages, these packages includes service and elevators in advanced agreed period (www.kone.com. Available 1.12.2012.)

Questions to be answered, is current service pricing in the right level and what is the service business potential in Finland with LKI machinery, Amada Press Brakes, Amada Shearing and Punching machines. There is also made some estimations according the machinery and used price which was approved by customers on interviews. Calculations are purely estimations and are based LKI machinery and Amada Press Brakes, Shearing and Punching machine installed in Finland.

The purpose of this thesis is to evaluate service business potential in Finland concerning LKI Automation devices, Amada Press Brakes and Amada Sheet Metal Stand Alone machines. Also this thesis tries to find an answer to the question is current service pricing in the right level and does the customers accept it.

1.2 LKI Käldman Itd

1.2.1 Short history 1979 -2012

The company was been established by Mr. Leif Käldman in 1979. A programmable back gauge for press brakes called "Poscontrol" was taken into production in 1984. The first automatic handling system to ABB was delivered in 1990. Year 1991 LKI Käldman Ltd developed its first loading and unloading devices for punch presses. During 1994 and 1995 LKI developed the LKI 200 Manipulator, an easy retrofit for punch presses which has the first delivery for Amada (www.lki.net: Read 15.06.2012).



Figure 1 Part remover PR for punching machines. (www.lki.net : Read 15.06.2012).

In 1997 the Part remover, PR, for punching machines, a unique design with thin suction-pad plate picking parts from inside of punching machine was developed. (www.lki.net: Read 15.06.2012).

In 2001 in Bennäs a new factory for manufacturing machine frames and components was built. (www.lki.net: Read 15.06.2012).

In 2002 LKI Käldman Ltd. developed first ASLUL loading and unloading tower for Amada FO Laser machine (www.lki.net: Read 15.06.2012).

At the Euroblech exhibition in Hannover, in 2004 the CS300 Compact Storage was shown for the first time (www.lki.net : Read 15.06.2012).

The third generation of Part Removers PR III for punching machines was developed in 2005, and also a new production plant (B-hall) for assembling of Automatic towers and Storage systems was built in Bennäs beside the C-hall (www.lki.net : Read 15.06.2012).

In 2007 more production space was needed again and the plant had new extension.



Figure 2 At the fairs. (www.lki.net: Read 15.6.2012).

LKI Käldman Ltd received "The strongest SME in Finland 2008" award in 2008. The prize was given from development made with CS II of Compact storage. SME is coming from words Small and Medium Size Enterprises. In 2009 the company was listed with Amada Co., Ltd who acquired 20% of the shares in LKI Käldman Ltd. Also development of new products ASIIIMP Automatic storage with loading and unloading functions for both punching and laser machines (www.lki.net : Read 15.06.2012).

In 2010 the compact MP SheetCat Loader was developed for punch and laser machines. There was also a big delivery of safety pick and drop stations for customer Anttila Oy. In 2011 developed ASLUL FO_MII for Amada FO-MII machine.

All operations in Bennäs were concentrated to the same facilities. (<u>www.lki.net</u>: Read 15.06.2012)

1.2.2 LKI present 2012

LKI solutions for sheet metal handling are sold under the Amada™ brand, when connected to Amada punching or laser machine.

Below figure describes how offering is divided. Company has 6 different functions and they are Innovative engineering, Production engineering, Supply chain management, Services and Solution Proposals. Project management is there influencing to all in order to keep everything in order and have projects ready just on right time.

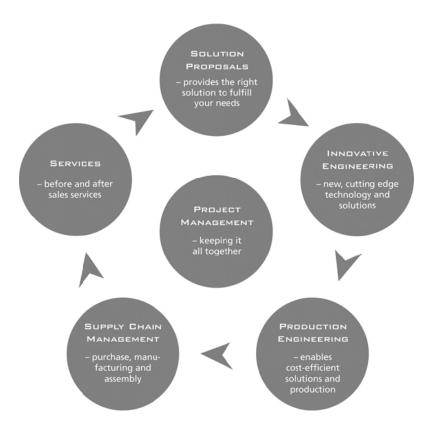


Figure 3 Picture of offering at LKI Käldman. (Internal power point show at LKI Käldman Ltd. 2012.)

LKI has three major business areas, see below figure. This thesis is concentrating on LKI Services.

Systems for sheet metal handling is concentrating on automation side for punch and laser machines and as well for FO-type of laser and storage systems. These systems are sold under the Amada[™] brand within their global sales channels. Currently there is sold over 2000 systems all over the world.

Systems for storing and moving is focusing to compact storage systems called as CSII, Flexible buffer storages (FBS), Sheet stackers and Safety pick and drops stations where biggest reference in Finland would be Anttila Oy.

Anttila Oy has now new designed, manufactured and installed safety pick and drop stations for collecting and loading stations for its storaging.

LKI Services offers preventive maintenances, repairing services, spare parts, installations, softwares and updates and LKI Customer assistance. This thesis concentrates in Services potential calculation in Finland. (www.lki.net : Read 01.12.2012)

 Automation for punch Compact Storage • Prentive maintenances Systems, CS II and laser • Repairing services Flexible Buffer Storages, Automation for FO-type Spare parts **FBS** of laser Installations Sheet Stackers Automation for Bending Softwares Safety pick and drops Storage systems • LKI Customer Assistance stations, Case Anttila O Systems for Systems for sheet metal Storing and **LKI** Services handling Moving

Figure 4 LKI business areas. (www.lki.net : Read 15.06.2012)

1.2.3 Camline Corporation

1985 – Company has been established 24th of November 1985 as name as Tietolinja KY. First product was a program which replaced a tradional program loading from holetapes to punching machine. (www.camline.fi Available 26.9.2012)

1988 - Tietolinja KY changed as a Ltd. (<u>www.camline.fi</u> Available 26.9.2012)

1993 – The company participated in the international PROJECT E! 744 FMS MAINT – product development project, which had a goal to develop a integrated maintenace system. In the project was developed WinADC – ja WinMAINT – softwares. (www.camline.fi Available 26.9.2012)

1996 – First remarkable Windows based FMS-delivery to Sandvik Tamrock Oy. (www.camline.fi Available 26.9.2012)

1998 - FMS 2000+ -project there was developed a principal, that is used in all Camline FMS- and storage control solutions. (www.camline.fi Available 26.9.2012)

1999 - Tietolinja Oy name changed to Camline Oy. (<u>www.camline.fi</u> Available 26.9.2012)



Figure 5 Camline craneline. (www.camline.fi Available 26.9.2012).

2000 – First FMS deliveries to other business areas than metal industry, for Finnair Catering Oy. (www.camline.fi Available 26.9.2012)

2002 – Defining the most important marketing areas again, Germany and England subsidiaries were terminated. (www.camline.fi Available 26.9.2012)

2002 – Launched a new productconcept called as CAMLINE® ProSUITE. Renewed CAMLINE® ADC is integrated on the system first. (www.camline.fi Available 26.9.2012)

2007 – Subsidiary in Sweden terminated. (<u>www.camline.fi</u> Available 26.9.2012)

2007 – Software cooperation started with AB LKI Käldman Oy. Sheet metal systems automation software development started. (www.camline.fi Available 26.9.2012)

2012 – LKI Kälman Ltd. bought Camline Corporation. (<u>www.camline.fi</u> Available 26.9.2012)

1.2.4 Amada Group

Amada Group was established by Mr Isamu Amada at 1946. Today this global sheet metal cutting machines group consists 80 companies and subsidiaries. At the beginning from sawing business the group expanded their offering to bending machines which with their innovations made by their leader shake the whole industry. (Amada Internal presentation Powerpoint show. Amada now. Available 1.9.2012.)

They have been followed a success recipe which has specified by Mr. Amada:

- Joint growth with customers
- Atmosphere supported by innovations and development

- Constant product development and renewal with newest high technology
- Ethically lasting business model used in all Amada business areas
- Respect towards people and nature. (Amada Internal presentation Power-Point show. Amada now. Available 1.9.2012.)

Amada's global organization consist five areas, Amada Japan, Amada Asia, Amada USA, Amada Europe and Amada China. There is also a huge amount of sales agents among all areas. Also agencies are involved. One of the agencies is Ama-Prom Finland Oy. (Amada Internal presentation PowerPoint show. Amada now. Available 1.9.2012.)

Agency which is operating in Finland is Ama-Prom Finland Oy. Ama-Prom Finland Oy is official Amada-product representant in Finland. CEO is Sami Yonemoto. Employees there are totally 30. Ama-Prom Finland Oy offers sales, service and spare parts for all Amada machines in Finland. (Amada Internal presentation PowerPoint show. Amada now. Available 1.9.2012.)

Amada[™] has several different product lines consisting bending machines, sheet metal punching machines, laser machines, saws, automation and sheet cutters. Figure 6 shows also product names in different product lines. LKI produces needed additional equipment for punching, laser and automation machines.



Figure 6 Amada product families. (Amada Internal presentation PowerPoint show. Amada now. Available 1.9.2012.)

1.3 Research methods and evaluation models

In this thesis are used two different types of research methods, interviews and calculations. Interviews were made with biggest PR customers in Finland, they all had similar machine type and that machine type has more to be served during its lifetime. Also there is no reason to make interview to different countries due to tight research schedule and too big travelling costs. Also choosing Finnish speaking customers minimized language barrier risk and faults from translated interviews.

However PR is not too big system in order to have it more stable object to be maintained versus bigger systems, which are having a lot of different checking points during maintenance and in Finland there is not so many customers who could have been interviewed for this research.

According to Zeithaml et al. (2000) that quantitative research in marketing is planned for when there is a need to improve or develop service delivery and design. Additionally they also stated that this is very essential tool when evaluating customers' perceived value and their satisfaction level towards services.

Some estimated calculations based on interview results are made according to machinery in Finland and using price what customers has approved in interviews.

Interviews are recorded and are being literated.

Interviews was made with ten customers which were choosing to be as similar type of customers and having as similar machinery and customer experiences from LKI earlier.

Basically all customers are subcontractors and are producing their goods in twoshifts. This is meaning that their machinery needs to be in good condition in order they can serve their clients as reliably as possible. If they are delaying their deliveries that causes also delays on production in customer site. Next table shows that there was interviewed CEO's, production managers, owners and service managers. Company size varied a lot, some companies were smaller and some companies were working worldwide. Most of the customers were subcontractors. All customers had a similar type of LKI loading device in order to have one similar issue that survey could be comparable. All interviewed people were men.

Interview ID	Title	Company size	Own or sub-
			cotracting
l1	Production manager	130 employees	both
12	Production manager	100 employees	both
13	Owner	120 employees	subcontracting
14	Production manager	550 employees	both
15	Production manager	100 employees	both
16	Service manager	1015 (Finland 150)	Subcontracting
17	Owner	15	both
18	CEO	25	Subcontracting
19	CEO	40	Subcontracting
I10	Production manager	150	Subcontracting

Table 1 Interviewed customer types.

Calculation model is evaluated according to Torkzadeh made evaluation model. To the evaluation of made calculations was interviewed LKI Käldman Ltd. Service department Mr. Erik Brännbacka.

Mr. Torkzadeh and Mr Doll states that end user satisfaction can be divided into five different categories.

- Content, is the information precise enough.
- Accuracy, is the information accurate.
- Format, how output is presented.
- Ease of use, is the system user friendly and usabilty easy
- Timeless, is the information up-to-date or old.

(Torkzadeh et. al. 1988).

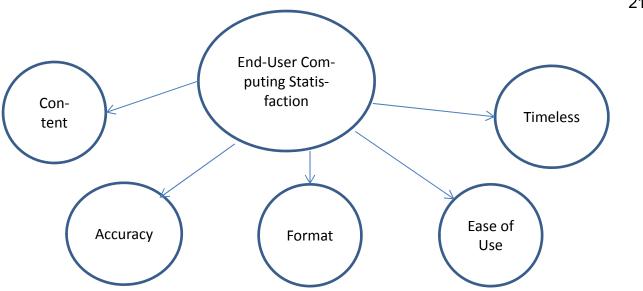


Figure 7 Torkzadeh model for evaluation of calculation model. (Torkzadeh et. al. 1988).

According to Mr. Torkzadeh model, there was asked 32 questions from Mr. Brännbacka. Results of the interview were that calculation model is easy to use, it is according to made agreement, is accurate, is easy to modify and with calculation charts you can describe results more visionable way.

Interview was litterated during the interview.

Examples:

"Calculation model is simple and easy to fix. The formula is not too long. There is exactly the information what was asked when making scenario evaluations for Service."

"Grade would be 8 at least." Scale was 1-10.

"It could be developed so that there would be also travelling costs included. Here is calculated only potential as was requested. There is not calculated profitability and also political issues are making problems. According to my opinion: this is good."

2 SERVICE BUSINESS

According to Kotler et al. (2009, 563)"if you charge for the activities you perform, then you are in service business".

When companies invoices what they do for their customers you can say you are in service business. Usually services are not touchable products, they are working hours mostly from performed service.

According to Davies (2003) (by Fischer et al.) machine manufacturers have four stages in proceeding towards a service business model. These are:

- 1. Manufacturing
- 2. Systems integration
- 3. Integrated solutions
- 4. Operational and intermediary services.

According to Fischer et al. (2010) there can be opportunities to be exploided in service business which is possible in three phases.

- 1. By integrating the basic service into the product price
- Dividing product and service business and having service profit and revenue
- 3. Going into the customer activity chain by utilizing of service expansion.

The table below shows a service logic versus goods logic according to Grönroos (2007, 56)

	Service logic	Goods logic
Offering	Focused on value-	Is focused on resource of
	supporting process	value-supporting
Perspective	Focus to go into custom-	Physical item which is in
	ers process and support	customer usage and pur-
	processes	pose of product is creat-
		ing value to the company
Business logic	To offer services that	To produce goods as re-
	support customers' that	sources to the customers
	gives added value to the	and that adds to the cus-
	customer	tomer needed value.
Role of the customer	Is cooperating with sup-	Is purely creator of the
	plier in order to create	value
	needed value	
Company role	Provide needed process-	Providing needed goods
	es and cooperate with	to customer and is sole
	customer	producer of this product

Challenges of Service have been described by Zeithaml, V et al. (2000) that more longer period services are offered more complex they are to be specified and marketed to customers.

- Zeithaml et. al also mentioned that making services to simplified way described meaning that customers understand words so differently and cannot have a clear picture of offered service.
- Second risk they are talking about is related to service productivization,
 letting non-ready service sold from the factory, sales people selling service what they don't know well enough.
- Third risk is subjectivity, different people feels differently about the service and they became blind for the service product offering.

 Last risk they mentioned is related to understanding same word differently, meaning if service is described only by words it really can be understood as many times as people reads the text.

3 PRICING

According to Baker, 2001 there is no as strong marketing tool effecting the customer than the price and business is defined by what it charges for. More expensive service is the more tempting it will be. (Baker, 2001).

This phenomenom can be seen also when buying a car, more cheaper car less tempting it is. High price generates an illusion of high quality product. Customer can assume to get more value for his/her money when buying highly qualified expensive brand.

There are also surveys that prove that if you are treating your customers well, price is not an issue. In fact too low price can show that you do not value your service. The biggest reason to loose a customer according the survey made by William J. Winston, is that the customer believes you do not care about the customer. "You are what you charge for". (Baker, 2001).

3.1 Characters taken into account when pricing

Hinterhuber et. al 2011 states that pricing has mostly been made by managers. Not so many researches have been done on pricing, meaning researches only makes research not actual pricing in real companies. LKI Käldman has made pricing according to cost based pricing, there is a cost what you need to cover plus have some margin.

According to Bundschuh it seems to be more of a rule than an exeption that put a price on services is much harder than pricing products. Services are not properly documented or productized and service costs can be varied very different ways, depending of the machine usage, age, service engineers etc. (Bundschuh et al. 2003).

Also Bundschuh et al. stated that only a few companies use the above mentioned data on their pricing. He also mentioned that one air-conditioning company gathered many weeks' sufficient data about standard service repairing times and they discovered that it may vary as much as 30% depending of the machinery configuration and service engineer knowledge. It was mentioned that some companies have been negotiating special service agreements with individual customers having very different terms of agreement. Those of course are very hard to keep in track. It also makes it very difficult to understand services and its profitability.

There is made a conclusion by Bundchuh et. al. that many companies are pricing their services on the basis of intuition. This causes different problems on profitability when charging too much it may cause profit decreasing due to demand decreasing. Unfortunately it is more than often considered that service is only a necessary assessor and is not developed as actual products. (Bundschuh et. al 2003).

Seems to be that more facts and information are used on pricing and produtivization phase more margins are achieved in small time period, typically within a one year. That also improves quality and efficiency rates of the company. (Bundschuh et.al 2003).

According to Palmer (1998), there are four major factors influencing service pricing.

- 1. How much costs to produce the service
- 2. What is the price customers are willing to pay for it
- 3. What is the price competitors are charging from similar service
- 4. The constraints on pricing that are posed by other agencies.

3.2 Pricing methods

Kostis (2009) divided pricing policies used in industrial service firms like below list shows.

1. List pricing

- All customers having the same standard list price.

2. Negotiated pricing

- Are agreed and negotiated with each customer individually

3. Discount pricing

 Discounts given if customer buys in certain period certain amount of services.

4. Price bundling

Instead of buying only one service, price bundling gives an opportunity to sell two services at discounted price instead of selling only one in fixed price.

5. Differentiated pricing

 Different pricing related to customer relationship, size, sales volume, loyalty among others.

6. Competitive bidding

- Customer asks offers from different service providers and keeps opportunity to choose the best for them.

7. Loss-leader pricing

- One service to be offered at very attractive price, even below its costs and among this one will be offered more profitable services.

8. Psychological pricing

- Pricing ends in odd numbers.

Currently in LKI Käldman there are used list pricing, discount pricing and negotiated pricing.

According to Kostis (2009), pricing methods used in industrial service firms can be divided on three different ones.

1. Cost-based methods

- Cost-plus method, a profit is added on the costs of the service
- Target return pricing, there is set a target for return
- Contribution margin analysis: takes into account only direct costs of producing the service when defining the sales price.

2. Competition based methods

- Similar to other providers
- Cheaper than other providers
- More expensive than other providers

3. Customer based pricing

- Value pricing: priced according to customer expectations and value thoughts
- Perceived value pricing: priced according to customers perceptions of the price.

3.2.1 Cost based pricing

Baker has stated in 2009 that cost plus pricing would look like this:

Service → Cost → Price → Value → Customer

Meaning that Service generates a cost where to needs to be added a margin that generates a price and value to the customer.

According to Monroe (1990) cost based price can be calculated as follows:

Price = (1+m) (variable costs)

Whereas m is as markup.

There has been made many empirical studies of costs as basis for settling the price for the service. There are many reasons why this type of pricing is used.

- It's easy to calculate costs which are carried during the service producing phase
- When for example a car has an unknown failure, it is agreed that certain amount of money is charged per hour when investigating the fault. (Palmer. 1998).

3.2.2 Value based pricing

Value in economic terms is defined as "The maximum amount that a consumer would be willing to pay for an item" and this means that value pricing can be specified having a maximum price what customer is willing to pay. (Baker, 2009).

Value-based pricing is a way to pricing products as customers values the products according to Stedman, 2000. The main goal is to give right price to the product, not too low not too high, but the price should be what customers are willing to pay from it, what is depending on customer expectations and how he benefits from the product.

Stedman also states that the problem with traditional cost-based pricing approaches that "you don't know what value your product offers to customers," while Cressman says. "You can end up leaving money on the table and not getting paid what your product is worth."

To assess a product's value, it maybe necessary to start conducting in-depth interviews with similar customer using the product. It might be enough to interview 8 – 10 customers, but sometimes there is a need to interview significantly more. Shorter surveys may be too superfilial to get customer expactations and values clear. An interview can last even two hours. (Stedman, 2000).

Stedman stated that value-based pricing was very rarely used. According to Stedman, it is said that only 10% of the companies are using value-based approach. (Stedman, 2000).

There is nowadays mostly cost based pricing used according to my knowledge from companies I've worked for.

The reasons that are making value-based pricing hard to sell to the customers are for example that they might be afraid to get cheated and that they don't have an idea what the products real value is to them. Having value-based pricing successfully on the right level requires that you really need to understand your customer, and that takes a lot of time. If you just put your costs and a margin on top of that price, it seems to be easier way, but then you may even loose some money what customer would be willing to pay according to their values and expectations of the price. (Stedman, 2000.)

Hinterhuber et al. has noticed that difficulties on value-based pricing are due to assessing value, communication value, market segmentation and force management and as well as senior management support. (Hinterhuber et al. 2011).

Baker, 2009 says that value pricing can be shown in chain like below:

Client → Value → Price → Cost → Service

Also he states that value pricing turns upside down more rational cost-based pricing, where normally the questions asked what prices we need in order to cover our costs and earn enough profit. In value based pricing you are asking yourself, what are the costs we can afford in order have the price obtainable from the client and still earn needed profit?

Baker states that not one customer is buying hours, they just want to buy a service which easies or gives added-value for their needs and either time is no money and cannot be billable by hourly-basis. For example if you take a car to service and after service it has been fixed for five hours and is still broken. Are you willing to

pay those five hours? No, you just want to have your car returned completely fixed. (Baker, 2001).

Obstacles to value-based pricing by Hinterhuber et. al.2011.

Main obstacles	Manifestation	Best practice
Value assessment	No methods, tools or cus-	Depth interviews, conjoint
	tomer value information	analyses or value in use
		assessments
Value communication	Communication puts cus-	Communication then
	tomers to fixate on price	fades away the price fixa-
		tion
	Too much communication	Putting features and
	related to features and	technical issues into cus-
	technical issues.	tomer benefits or busi-
		ness impacts.
Market segmentation	Is made according to intu-	Make needs-based seg-
	ition or is based on easily	mentation
	noticed but ineffective	
	criteria.	
Sales Force	Not having incentive	Training and monitoring
Management	schemes and guidelines	needs to be done. Dis-
	to encourage sales to	counting is not encour-
	concentrate on values.	aged. Putting efforts to
		sell value.
Senior Management	Is mainly interested in	Provides vision, context
Support	top-line growth or market	and incentives to imple-
σαρροιτ	share and is not encour-	ment value-based pricing.
	aging a focus on value.	mont value-baseu pholing.
	aging a roods on value.	

When adopting the value-based pricing, there is a need to segment one's customers into the groups with similar needs. Also it is important to realize that costs drives your pricing, and you really need to know if what is affordable price to you. (Stedman, 2000).

Baker advises to try and first sell agreements, which are fixed priced ones, including options and benefits what customers' values the most. (Baker, 2001). According to Zeithaml. V et. al. customer valuations can be divided into four different categories. (Zeithaml. V et. al, 2000.)

- 1. Customer values low price.
- 2. Value is the most important issue; customer just wants the service no matter what price is.
- 3. Value is related to quality and price can be according to quality expectations.
- 4. Value means all; customer gets value for all what he pays.

According to Bertini et. al. (2012) value based pricing ideology consists of five strategies which can help.

- 1. Focusing on customer relationships, not on money transactions.
 - Value customers, not the money they are bringing in

2. Be proactive

- Price setting that way that they are attracting both parties.
- 3. Flexibility needs a premium stamp
 - Pricing can be set and be changed according to flexibility needs
- 4. With transparency on pricing
 - More transparent pricing is, the less questions will pop up concerning pricing

5. Be fair

Clear prices and fair to all.

Rekola et. al. 2009 described issues to be taken into account when pricing services. See below figure according to Rekola et. al 2009.

Price for service is generated from several issues:

- What customer can afford? Generally accepted price
- Company brand. Compare Mercedes Benz vs. Dazia
- Additional costs
- Price setting strategy
- Business strategy. What is important to the company, cheap spare parts could generate more sales and more realiable machines when spares are replaced more often because price is cheap.
- All costs and resources needed. What is the cost of service engineer?
- Price list used by other providers. Is your price list differing a lot?
- Potential for service. How much service you can sell?

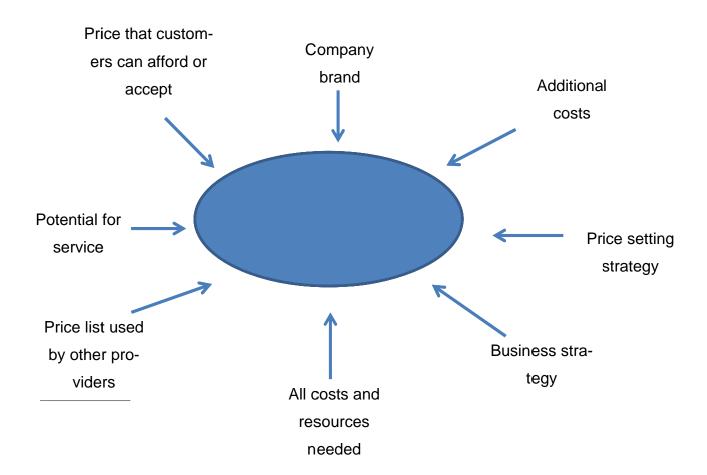


Figure 8 Issues taken into account when pricing a service.

4 SERVICE POTENTIAL

This section describes LKI Services business area, service strategy and future scenarios. There is also described service agreements.

4.1 LKI Services as business area

Services include both installation & maintenance and spare parts duties in LKI Käldman Ltd. Nowadays installations requires the most of resources, meaning that basically normal pre-annual and annual maintenances are done by LKI service engineers in just a few cases. (www.lki.net)

There are several functions offered via LKI Services. These are Project Management, Installations, Training, Spare parts, Maintenance, Customer Assistance and Modernizations as below picture shows. (www.lki.net)



Figure 9 LKI Services are divided into seven different areas. (www.lki.net).

Maintenances are carried out by the customer himself, by Amada or by competitors. Normal check-lists are made for service interventions for pre-annual and annual maintenances. Machine break-downs are handled by LKI and are ordered by customer or by partner. (LKI internal powerpoint show.)

From 2011 active service business sales has been organized. During this time in LKI Käldman Ltd. they have been sold five service agreements. Basically service is sold passively when machine is already broken, meaning they are not sold effectively preventive maintenances, and cases are mostly urgent. Urgent maintenances are of course very difficult to coordinate, due to prioritizing issues and cases, who goes to what customer when similar machines are broken and only one possible service engineer is available. (LKI internal powerpoint show.)

Service sales have had a subcontracting role for Amada or Camline, not active sales directly to end customers. In the future this process can change, and LKI is willing to sell service straight to end customers especially in Finland or for more complex solutions. Due to non-negotiated policies and logistical issues, in Europe service for LKI equipment is sold by majority via Amada. (LKI internal powerpoint show.)

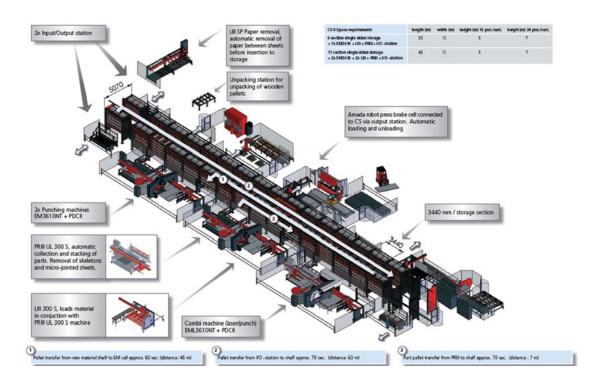


Figure 10 Describing production line, where is machines and cells. (LKI internal presentation show. LKI CS II en.pdf)

In one production cell there can be for example a punching machine, unloading and loading device. LKI Käldman is manufacturing unloading, loading devices and storages, not punching or laser machines. Punching and laser machines for cutting sheet metals are manufactured by Amada.

Basically LKI service engineers are qualified to serve LKI Automation devices, not all can serve Amada machines. There is a need to train more people in order to maintain all machines and equipment inside the same cell and customer facilities.

4.1.1 Strategy

LKI Services is set as one of the biggest departments in LKI Käldman Ltd. Below picture shows how LKI Services is described in the line with Systems for Storing

and Moving and Systems for Sheet Metal Handling departments, meaning is has as important role in front line towards customer needs.

Main business areas

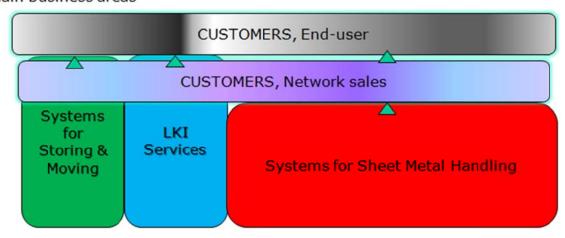


Figure 11 LKI Services target in near future. (LKI internal slideshow.)

Departments shown on above picture are being presented in chapter 1.2.2.

LKI Services business has divided their future growth plans on three different scenarios. Scenario one is just concentrating to grow with new machine sales. Scenario two is targeting to grow along with machine sales and also make some strategic investments such as for example new service engineer hiring. Scenario three is the most demanding one as there is both growth plans with machine sales and making strategic investments, but also establishing a worldwide service network.

LKI Services business area is going to take scenario two into action. Scenario II is "Grow along with machine sales and make strategic investments." (LKI internal power point slideshow. 2012.)

Scenario two is including actions for:

- Strategic investments (Sales & Service engineers, competence)
- Grow along with machines sale and market demand and

- Active sales of Services, especially Ama-Prom and Amada machines
- Knowledge level increasing among service engineers in order to maintain Amada punching-, shearing- and press brake machines.
 (LKI Käldman Ltd. Internal power point slide show 2011).

There is made a list of strategic guidelines what LKI Käldman LTD is currently using:

- The platform for LKI Käldman Ltd. competitive strength lies in innovative and efficient solutions providing added value to customers.
- Close cooperation with Amada in developing sheet metal handling solutions for their blanking and bending machines.
- Actively supporting and utilizing the strong global marketing & sales network of Amada.
- Increase market presence to understand customer value.
- Modular-based solutions made by LKI Käldman Ltd are suitable for integration with products and systems from third party suppliers.
- Design LKI Käldman Ltd solutions with the customer in focus.
- LKI Käldman Ltd. service offering enable life-span attention to the processes of its customers.

4.1.2 Resources

In 2012 there are six service engineers, who does the actual service work, working for LKI Kälman Ltd. In order to maintain more machines, there is a need to expand their knowhow and also a need to have more partners to handle sold maintenances. Also there have been discussions with subcontractors, and some agreements are partially signed. Some training for Amada Press Brakes and Punch Presses has been done.

4.1.3 Know-how

Knowledge level is being measured and competence of service engineer, who is doing the actual maintenance work and service action in the field, is measured with values 1 to 5. Value 1 means poor knowledge and value 5 means excellent knowledge level. Knowledge is used on machine maintenance service abilities and who is ready to maintain what machines. Questions asked about the know-how level are 20 pieces and are asked once per year.

4.2 Camline® Software

Camline Corporation short history is being presented at chapter 1.2.3.

LKI Käldman Ltd. has bought complete business of Camline Corporation in April, 2012. Company is located in Lappeenranta, at east of Finland and is established 1985. (www.lki.net)

Camline is specialized in softwares for the control of automation solutions and solutions for improving production efficiency in manufacturing and engineering industries. Totally 13 person will be affiliated to LKI Käldman Ltd. The acquisition complements product and service offering in LKI Käldman Ltd for sheet metal industry customers. (www.lki.net)

4.2.1 Software service

Camline® Software service business area makes maintenance contracts which gives below benefits for the customer:

New program versions during the agreement period free of charge

- Discount on Software products and services
- Priority customer status
- Free support, however PC itself is under customers responsibilities
- Software installations if PC breaks down.

4.2.2 FMS service for flexible manufacturing systems

Currently there are two options what to be offered to end customers, who are having FMS.

Maintenance contracts which includes certain amount of service visits and some parts once or four times per year. How many times visits are offered, is purely depending of the machinery usage. For example FMS with one machine attached or FMS with ten machines attached, requires different amount of service.

On call service agreement:

- Two possibilities phone service during normal working hours or 24/7 phone support
- Gives cheaper working hour pricing
- Response time
- Customer needs to arrange needed maintenances according to OEM manuals

4.2.3 Service agreements offered by LKI Käldman

In this study I focus on basic service agreement level, because earlier knowledge is yet gained from the field. There is spesified a machine specific maintenance agreements for LKI machinery.

Maintenance agreements are normally including:

- pre-scheduled bi-annual maintenance
- preventing unscheduled maintenance stops
- Maintenances are carried out according to machine specific checklists
- updating of programs
- recommendations for future actions.

The purpose of maintenance agreement is to ensure machine reliabity level in order machine is up and running when customer is running their production. Benefits for service provider is to ensure service engineer sufficient work load and maintain machines like OEM service provider alone can when knowing machinery completely. Also feedback from field is essential when developing future features of machinery and services.

Different levels of service agreements, according to customer needs:

- Basic Bi-annual Service
 - There is made only pre-scheduled maintenances according to service action lists, no spare parts included in.
- Standard Bi-annual Service + Spare part kits
 - Comparing to Basic level, there is needed spare part kits included into agreement price.
- Premium All service, all spare parts

 Premium service agreement is including all needed service interventions and spare parts for needed maintenances due during the contract period.

5 EMPIRICAL RESULTS

In this section is being presented results of the interviews and presented accordingly made calculation model.

5.1 Interviews

Interviews shows what theory also tells according to Stedman (2000) who states that price does not tell everything and customers really value benefits they will achieve when using regular service.

5.1.1 Service business and satisfaction

First question was dealing the contact information, do customers know how to contact LKI service.

All knew that where from (Internet, phone numbers) they can reach sufficient person from LKI and where to call. However there were some complaints coming from language wall, most of the Finnish customers prefer to speak Finnish.

Examples:

18 answered: "Yes, I know, via Internet pages I go and get contact information".

Is said: "Of course I know that, I do not have sufficient numbers, but our machine operators do and they very actively use those numbers so that we are in touch with you. I do not want to take those numbers because machine operators know the machines the best and it is like second hand information if I call versus if they call directly by themselves."

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16 answered: "Yes, I know. Email and phone. There is one negative side, because there quite often answers English speaking man, isn't it? From there it is then to

be transferred quite soon to the Finnish speaking man."

Second question was how important is to reach LKI Service and have fast answer

concerning the service and what is rapid enough.

Most of the interviewed customers where having similar needs that service reply

are needed latest day after the first contact customer made. Also that was consid-

ered fast reaction time enough.

Examples:

According to I6 there is said that: "Very important!"

It is said by I8 that: "It is very important, because mostly it is coming from production problem and then there is a need to have help, if it is not concerning preventive maintenance, because in that case it is not so urgent. Yes it is 24 hours, if

machine is not running."

In answered: "Well yes it is very important, we have three working shifts and machine running all the time, so we should get an answer during the same day. Very often situation is that we get an answer on next day. More preferably it would be

having an answer on the same day."

Question was related customer satisfaction with LKI Services. Results were that

basically all customers are satisfied with LKI Services.

Examples:

According to I2: "Well, straight LKI services we do not use, meaning that mainly

that spare part services is only what we need and services we have by our own.

But we are satisfied. Yes indeed, it has functioned well."

I4 said: "Yes, not like I said that we would have a big need for it, because we do not have any bigger issues with LKI machinery. I believe that LKI and its cooperators are or can response to needed service requests, I'm satisfied."

16 answered: "Well according to my short experience, yes we are satisfied."

In Service business there is a very important to know what issues customers values and keeps the most important things in machine maintenance. From chart below can be seen that interviewed customers' values the fastest actions and machine reliability and fast action. Results can also be seen on below chart.

Examples:

16 stated: "It is the most important issue this delivery time. If machine is not running, then the price is not the most critical issue, it is far more important that we know when machine is okay again."

According to I5: "Well like open mindedness is important and like we talked more about issues while we are working and what we are doing and why. That is very important to me."

19 said:" We naturally it is the most important to have fast service and what else would I like to say.. And of course that service engineer is qualified enough so that machinery are repaired well, I mean that they have sufficient knowhow level."

In answered: "Quality of service is important issue. Machinery needs to be in good condition after the service."

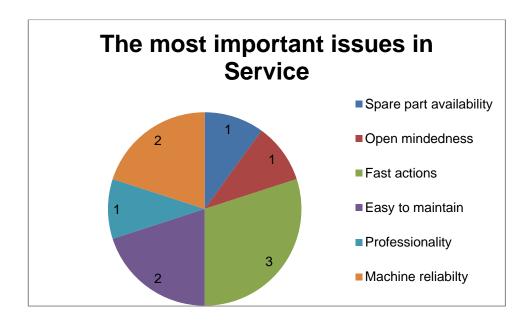


Figure 12. The most important things in Service

The most important things in Service are spare part availability, machine stops production if critical parts are not available fast enough, open mindedness is very important in order to talk freely and have full understanding towards different types of customers. Fast actions are very essential, due to avoid too long production stops. Easy to maintain means shorter maintenance stops and unnessassary production losses. Professionality, service engineer can handle and maintain needed issues and does not waste time. Machine reliability is straight coming from well maintained machinery.

In Service business occurs once in a while service provider changes. Question was related on service provider changes. Question was: Have you changed service provider and if yes, why? Results were that basically everything is about the trust and availability. More known service engineer is more he is used and ordered to make needed maintenance.

Examples:

I3 answered: "Yes we need to change them, some of the companies it just doesn't work and some companies then promise more better service, then we just have might change service provider, but that doesn't happen in daily basis. We just try

to make long term relationships and try to trust till last breath that they'll improve their behaviour, old contact persons are easier to deal with, but sometimes it just has not functioned."

According to 17:" Hmm. Generally it has been more professional person than person left in the company. Then it started to do business on own company. So it is like entrepreneur nowadays that service engineer I mean."

I4 said: "Well not so much, not really when talking about sheet metal machinery. Well there have been many reasons, bad service, and price vs. service quality not good enough and relatively very expensive prices and then bad service received."

5.1.2 Earlier or other provider best features

In order to develop own service business it is good to know what are the things customers did like on earlier providers or other service providers. Question was concerning what good features other service providers have. Results can be seen on below chart.

Examples:

16 said: "The most important thing is that machine is in good condition and works just fine after service engineer visit. When service engineer leaves the factory, you just put production running again."

According to I1: "There is one man companies offering their services, but we prefer to work with distributor. Then you know that you'll get appropriate service."

18 stated: "It is flexibility, fastness and professionalism. Not necessary in this order."

13 answered: "Well like I said on previous question, friendliness, we are friends and long relationships other ways that gives like different cooperation with friends vs. half known people."



Figure 13 Best features of a good service provider.

Customers in service values the most wide knowhow, this means you do not need to spent extra money to extra service engineer in order to have maintaned and fixed all needed machines in the same time. Familiar service engineers means to the customer that he/she can rely that service engineer knows what has been done, where is machine located in the factory, who to contact with, how to maintain machine and customer knows he/she can trust what is done and suggested to be done. Delivery time means shorter production losses and stops, this really saves money and time as well as fast service.

Next question was related on worst features of other service providers, which they do not want LKI to repeat. Results can be seen on below chart. Customers generally did not like having answers slowly on their request, nor non-qualified service engineers. Price is one critical issue as well which is considered very negative when being too high or higher than other providers' charges. This is important to know when developing Service business.

Examples:

110 said: "Well, that is that you just cannot reach or no answer by service engineer."

According to I7: "When service engineer professionalism level is not good enough."

Not qualified on appropriate way."

17 also stated: "Price is always what we don't like. But of course companies need to live too and like that, and of course I do understand that spare parts are expensive and that fellow needs to get his salary as well. Sort of these long distances are not what don't like either. We would like to have service engineer on site early in the morning and not in the afternoon."

In answered: "Price is that we don't like, but that is a necessary bad thing, because provider needs to live as well."

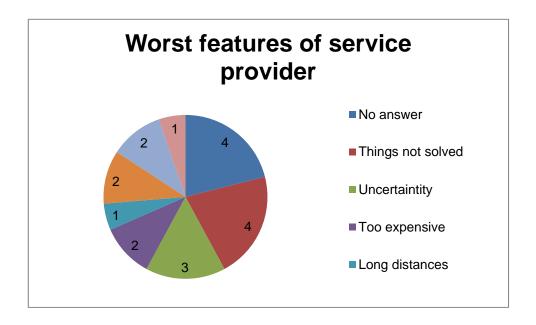


Figure 14 Worst features of a service provider.

Features customers concidered worst ones are not having an answer from service provider, there was said that any answer is good even if service would say that they do not know than having no answer at all. Same issue was with things that are not solved, there is a need to have some evaluated schedule when things are solved. Uncertaintity is one which was concidered a one of the worst features,

there is a need to use only qualified service engineers on site than sending trainees to the customers by themselves. If price is too high it was concidered also very critical if other service providers offer more reasonable prices. Long distances means expensive travelling costs.

What is good service and is that helping increase sales or bring new customers? Question was related on what kind of experiences customers were having if machine is maintained and runs without problems, could that increase sales or may that bring new customers to the company. Results were that they basically save time in long term.

Examples:

According to 18: "Of course on time deliveries will increase sales. Well not straight though."

19 answered: "Well yes, but basically machines should be running all the time."

12 said: "Hmmm, not that it doesn't influence on new customers, but maybe that can increase sales. Stability is very important issue."

5.2 Internal processes

Interviews also was handling internal processes and how customers can see LKI Services help them on daily routines.

When using regular service can customer reach money savings to upkeep their machinery? Results were varied a lot, some said they save and some not, question was hard to be answered since many customers has not calculated the real costs.

Examples:

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According to I1: "It is difficult to say, that how much you can save. Of course we

are having Amada as key machine that if it is not on production for example 24

hours, then it can be calculated according to machine hourly rates. There can be

calculated more than 75 euros per hour."

110 said: "We have not calculated it, and not followed so that we could say for sure

how much it costs. Basically we can find out that one, but we have not followed it."

According to I8: "Well pure money we loose of course, we are talking about thou-

sands of euros if machine is not on production. But then there is this secondary

influence as well and then we are talking about image losses and marked losses

or market values, and those are un-measurable issues."

Most of the interviewed customers agreed that machine safety remains in good

level when servicing machine in regular basis. However some of the interviewed

customers were never though issues like that way.

Examples:

16 said: "Yes, it supposed to be this way."

15 confirmed: "Of course, when machine is maintained in regular basis, made by

professional service engineers, they will not for sure leave the machine in that way

that there would left some safety device not connected properly."

According to I4: "Yes, of course."

Question was related if customers had noticed how much time they can save by using OEM Service versus making service by themselves or by other service provider. Results were that they have not thought about the issue earlier and cannot say if there is time savings.

Examples:

17 answered: "Everything we do by ourselves and are using also LKI engineers. On that question is hard to say. If there is some minor problem, then it is definitely cheaper to fix by ourselves, for examples if some detector is broken, then we just order the needed part and replace it. When we order a service engineer, it takes at least a day to get him on site and that is lost production time."

In said: "We yes, you save time, but that is hard to answer, because we in principle are using a distributor services and generally our own service engineer makes that fault analysis, maybe he gets some remote support via phone from distributor and that way we check can we handle issue by ourselves fast or do we need to order distributor's service engineer on site."

According to I4: "Yes it is like no use to make some greasing by distributor's engineer, but if there is some special then we might cause more troubles or make more faults than get benefits by doing ourselves. And of course that same effect is with other service providers because they are not familiar with the product."

I6 answered: "Comparing to that we make needed repairing by ourselves then you can say you save a lot of time by using somebody else."

Question was how regular service is arranged at the moment. Results varied a lot, some of the customers are handling that by themselves and some via Amada service or by their own service engineer.

Examples:

According to I8: "We've used distributor service mainly and also one of independent service provider."

I1 says that: "Yes, our service is made by distributor for Amada machines and for storages we'll use another company. At this moment it goes like that."

Interviewed I2 said: "One service engineer is own employed and having full time job in the house. Our purchaser buys needed extra pre-maintenances separately whenever needed."

Interviewed customers were asked what important things are when customer is choosing a service provider. Results can be seen on below chart.

Examples:

According to 11:" It's like that, it should be easy after signing off the contract, then we stick tightly on it and take good care of the terms and they'll inform in advance when next maintenance is going to be carried out and that fellow does not just suddenly show up by his own and start make maintenance without any notice in beforehand."

12 said:" Good availability is for sure the thing number one when choosing a service provider."

17 stated: "For sure it is generally that service is qualified and of course the price. In other words we try to have not expensive service and that price-quality would be in right level. Yes that is for sure the most important issue."

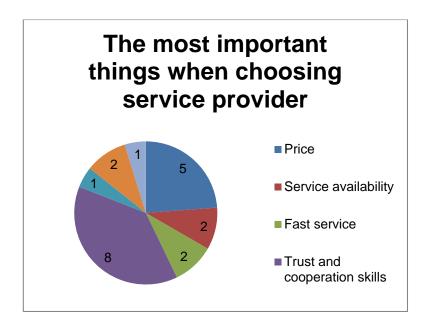


Figure 15 The most important things when choosing service provider.

Even price was concidered not so critical, it was one of the important issues when choosing a service provider. Service availability was important, fast enough service was when you can have a service engineer within 24 hours. Trust and cooperation skills are important, you need to trust to service that they can maintain and fix your machinery in order to avoid unnessary production stops.

5.3 Pricing

Next there was asked questions about current pricing level. In theory there was concentrated in cost base and value added pricing.

Question was how much money customer is currently using on preventive maintenances in yearly basis. Results can be seen on below chart.

Examples:

According to 18: "I would say that we are currently using about 15 000 euros per year."

14 said: "For sure for preventive maintenances we are currently using around 20 000 – 30 000 euros per year."

15 answered: "The whole company, yes it is like 30 000 - 40 000 euros per year."

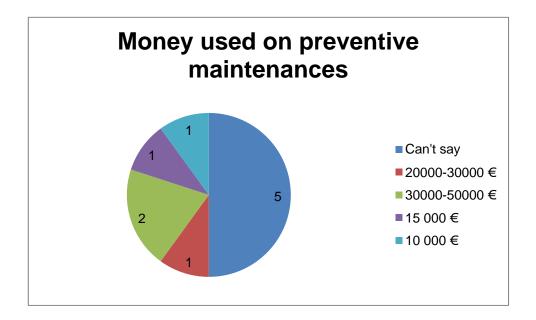


Figure 16 Money used for preventive maintenances

Money was used for services depending of the company size very different amounts per year, sum was varying between 10 000 and 50 000 euro.

Question was about money consumption on machine repair maintenances per year. Results can be seen on below chart.

Examples:

18 said: "Well then we are talking like 50 000 euros for sure. These are such information which we should check, but repairing maintenances and fixings are like multiplied amount when comparing to preventive maintenances. Meaning preventive maintenances needs to be carried out, because they upkeep your machinery as good condition as possible as long as possible, but faults are coming anyway."

According to 19: "Well those, I cannot say for sure, but not so many thousands of euros. I would bet that between five and ten thousand euros are all of our sheet metal machine fault repairings. Always there is something, because there is not yet invented a machine which is never having any faults."

17 said: "Last year we bought spares with 2000 euros. But there has not been any reason for service like many years haven't been."

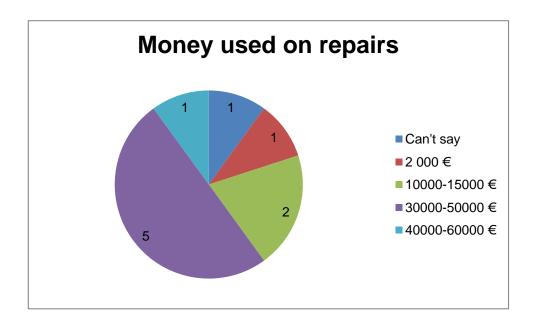


Figure 17 Money used on repairs.

Basically none of the companies has made a budget for machine servicing. Machines are maintained, but expenses not so carefully followed-up.

19 said:" There is nothing budgeted for service."

According to 18: "Well we need to put that amount of money on service what machine's needs, we do not have separate budget for that. Machinery need to keep running and production is the price whatever and of course if costs will rise too high, then we just need to renew the machine."

17 stated: "No, it is not surely defined."

16 was saying: "Nobody has given for me any budget for service. And till now nobody has not complained that there has spent too much money to services."

110 said "Also there is some kind of knowledge of the costs what might be expected going to servicing according to previous years costs. Costs may be a few thousand euros per year for all machines. Costs are followed so that if some machine service costs increases suddenly much, it will go over pain level and then we need to think what to do with the machine whether get rid of it or buy new one or shall we make a very big maintenance and try to continue with the old one."

In stated that: "There is some kind of budget, but not so tight one. Yes, we can talk here quite big amounts of money, surely more over than 100k euros in this factory."

5.3.1 Current used pricing level in machine servicing

Most of the cases stated that price is not the most critical. Also price level was considered generally the same what other service providers are using. The answer also convinced that customers really are buying value not hours.

Examples:

Is said:" Expensive it is always when talking about pricing. Generally they are mostly at the same level among all providers, but usually everybody is expensive."

According to 17: "Naturally everything is always too expensive, but let's say that normally what it takes for these machines then it is like normal level. You just can't say that it is more expensive than other companies have."

19 answered: "Well yes it is for sure on right level."

5.3.2 Importance of availability

Question was how fast customer can have service engineer on site. Results were that most of the customers are satisfied enough if they can have an engineer on site within 24 hours.

Examples:

16 answered: "It takes half an hour to one week. Basically it takes day or two. Actually it would be ideal situation to get an engineer till next day."

According to I4: "Well, let's say that most of the cases we can have an engineer. Usually we'll get him till next day yes. Or let's say that mostly we'll get, if machine gets broken today, then somebody comes already today at some moment."

In said: "Well it varies, he does not come right away, I don't know if that would help if we'd have a service agreement, because he is not necessarily here on next day. We are looking this from customer point of view and if we are having production alarm on and we cannot have machine back running and production and if we cannot get an engineer till next day, that is then quite big issue on our key ma-

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chinery. Our wish is to have an engineer on site within 24 hours, on warranty peri-

od we were having 8 hours response time."

Question was how important issue is having an availability guarantee. Result was

that all customers are appreciating an opportunity to have an availability guaran-

tee.

Examples:

I1 answered: "Yes it is. Availability guarantee is very important thing."

According to I6: "Hmmm, that would be reasonable thing."

19 said: "Well, yes, yes for sure."

5.4 Customer perspective

Next questions was concentrating to find out customer perspective in order to fin

out what customer needs and is expecting from LKI Services.

5.4.1 Customer expectations towards LKI Services

Question was what kind of expectations you are having towards LKI Service and

can you see as helping you on your challenges and opportunities. Results were

that many customers were expecting LKI to move closer to customer companies

and are happy with current relationship with LKI Services.

Examples:

19 answered: "Yes, now we are waiting, one of the challenges we just though in.

We have dealt years with LKI machines and have get along just fine, so why not in

the future. Amada has been our brand number one for years already and it's natural to have LKI machinery attached on Amada."

According to I6: "Spare part service and services are when they work just fine then there should not be any bigger issues."

Is said: "It would help a lot if you could be more closer to our factory. And for sure we would use your services more then. Of course we understand that that is very expensive to have one engineer here close to us for only one machine maintenances."

Interview question was concerning about future growth plans of the company. Results were that all are seeking for future growth and there is planned to search new customers and maybe new investments are made in near future.

Examples:

I4 answered: "Well yes for sure we are going to get growing, but it is quite challenging here in Finland. Actually we have left from the idea that we could keep the same volume as we are currently having. We are going to grow and that is our goal, but that will come nowadays from smaller work orders than those bigger series work orders. We actually see very challenging this near future outcome, so our machines really need to be in very good condition."

According to 18: "We are willing to grow and we are seeking new customers all the time, not so actively because we have so much work to do already with our current customers. I would say that our growth target is ten to fifteen present per year and if that kind of growth succeeds then it is just ok."

I1 said: "At the moment in machine investment side there are not coming any replacement investments. For sure replacement investments need to be done at some moment, but expanding the factory, that is not on our mind at this moment. Of course there is a need to have manufacturing volume higher. First quarter of

63

the year was good, but there has been quieter now and we really are waiting to

have more growth during autumn."

5.5 Customer expectations

Question was if price is not an issue, what customers would expect to have from

LKI Services. Basically all customers would like to have LKI Services more close

to their facilities.

Examples:

I1 answered: "Well as a partner here in service side."

According to 19: "Hmm. Yes, of course if there would be local service engineers. It

would be great having local service engineers here, that fastens and then there is

not those unnecessary kilometres because you don't need to drive hundreds of

kilometres far away."

110 said: "Once per month to check all machines that everything is okay. It is hard

to say actually."

13 answered: "Like being a good partner and easy to contact with and if possible

then these service engineers located near here and not being located on Swedish

speaking area or someplace there."

5.5.1 Customer worries

Question was concerning of customer worries, if there is any. Results were that there is only a few issues to worry about.

Examples:

I10 answered: "Well yes, those products could be more reliable and of course simpler to make maintenance and easier to maintain."

18 said: "I say that we can compete efficiently inside Finland borders, it just needs decreasing on man working hours beside machinery, yes more automation is needed on every sized components made. There is no time to pick up small pieces if it takes 5 seconds per piece to be picked up."

According to I5: "If something to be noticed, it would be nice to have an answer on questions asked and have the answer right away."

5.5.2 Customers development suggestions to LKI Service

Question was if there are some development ideas to LKI Service from interviewed customers. Most of the customers did not have anything to say, there was only a few development suggestions such as having a wider service engineer know how level in order they could maintain all machines at the same time and some mechanical shelf ideas.

Some development suggestions to LKI Service, examples:

In answered: "It would be for sure a lot easier if there would be one bigger provider to cooperate with, and who can maintain all of our machines and equipments what we have here in this factory."

According to I3: "That there would be listened to the customer more right way, so that if customer is having a real busy and urgent situation, then we expect that things will be solved and it doesn't just lie on table waiting something nor just be left on unread emails. My opinion is that there is so much information left in the email boxes and are not read. So you need to listen to the customer really."

15 said: "It would need more visits both side to know each other better. And really it would need face to face meetings that would be the best. There are emails and phones, but those are easily considered as not so important ones."

During our visits customer told us that some kind of shelf system would be nice on sheet storage. See below picture from one of interviewed customers.

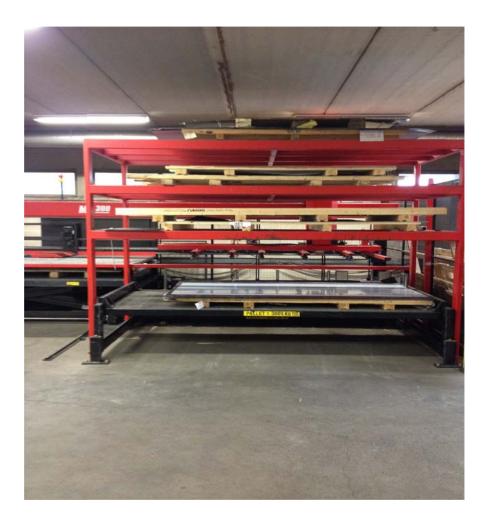


Figure 18 Sheet storage shelf improvement idea. Picture by Minna Kiuru August 2012.

5.5.3 Other issues that customer wants to inform to LKI

At the end of interview, there was asked if there are any other issues what customers want to share with us. Most of the interviewed customers did not have anything else to say.

Example:

According to I5: "Not anything else, but when we started we talked about one fault what we could go and check."

5.6 Service Potential

Service potential in Finland can be estimated by multiplying machines and service agreement price. In this study I focus on basic level service agreements, because there lack of experience with service agreements in previous years and no information yet gathered from previous years. According to customer interviews LKI Services has their current pricing in right level, and customers can accept the price. However there are some complaints coming from travelling costs. Those can be minimized if service interventions can be combined; meaning in the same area there is agreed service visits to be done during same service trip.

Machines X in Finland * Service agreement price, based on accepted hourly rate = Service Potential in Finland.

	100 %	75% utilized	50% utilized
Service Potential with preventive mainte-			
nances totally in Finland	1206580	904935	603290
Amada Press Brakes	414440	310830	207220
Amada Shearing	230880	173160	115440
Amada Punching	513760	385320	256880
LKI machinery in Finland	47500	35625	23750

Table 2 Estimated Service Potential in Finland when making only preventive maintenances including LKI loading, unloading machines and Amada Press Brakes, Shearing and Punching machines.

If half of potential is utilized then Service potential with preventive maintenances in Finland would be about 600 000 euro. Calculations are made only with basic level service agreement prices.

Preventive maintenances:

Total working days for service engineer	2279
Resource need (total working days divided with 200 working day per engineer)	11

Table 3 Resource need if all preventive maintenances are made for Table 2. machines in Finland.

Service Potential with corrective maintenances totally in Finland	1568554
Amada Press Brakes	538772
Amada Shearing	300144
Amada Punching	667888
LKI machinery in Finland	61750

Table 4 Estimated Service Potential if corrective maintenances are made by LKI Services for above machines per year.

Corrective maintenances:

Total working days for service engineer	2963
Resource need (total working days divided with 200 working day per engineer)	15

Table 5 Resource need in Finland for corrective maintenances per year for table 4 machines.

As above tables shows complete estimated resource need for both preventive and corrective maintenances would be approximately 26 engineers.

It can roughly be estimated that amount used on preventive maintenances is 30% less from money needed on corrective maintenances per year. Reason why corrective maintenances are more expensive to the company is that those are often emergency service intervenitions and usually spare parts broken are more expensive than for example filters and suction cups which are replaced on preventive maintenances. However corrective maintenances total worth is depending on different issues for example machine type, machine age, usage hours, cutting material, operator know-how, preventive maintenances done and general usage of machinery.

According to Koehler: "If you have no new-business appointments, you will produce no new business" means you really need to keep contacting new customers all the time and not wait in the office that customer contacts you. (Koehler, 2007).

Below an example of sales pipeline.

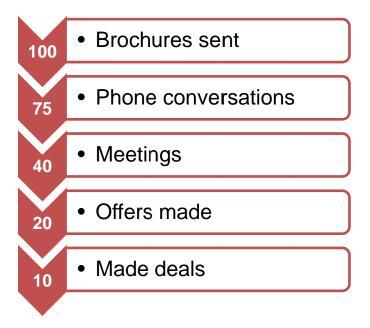


Figure 19 Sales pipeline example.

100 sent brochures makes 75 phone conversations. Those phone conversations leads to 40 appointments with customers and those will generate 20 offers to be made and finally will lead to 10 deals agreed. Here can be said that roughly 40 appointments makes 10 deals. From this scenario can be made estimations of sales engineer resource needs.

There can be made also so that someone else inside the company makes needed phone calls to the customers and agrees introduction meetings with sales engineer and customer. The purpose of first meeting with customer site is purely introductory, getting to know each other and gain trust both sides. Also there is need to be for the customer and listen their current situation and ideas.

Mentality of sales people needs to be supported by company directors. Without good sales there is no need to hire extra engineers.

Sales engineer resource in order to sell needed	phone				Resource
agreements	calls	meetings	offers	deals	need
Target 30% of potential customers	638	319	159	80	0,5
Target 50% of potential customers	1063	531	266	133	0,9

Table 6 An average customer has three press brakes, so above are being divided with three. In one day there is possible to visit three customers.

Resource need based on earlier calculations may be estimated. One service agreement takes approximately two working days, plus one day for travelling. According to Mr Erik Brännbacka there is theoretically 200 working days per engineer per one year, in practice 150-180 working days. This gives you an idea how much resources are needed to maintain if all machines are having a service agreement from LKI.

200 working days divided by 3 = 66 visits per year.

Usually one service agreement includes two visits, so above calculation shows that one service engineer can handle 33 service agreements, which are included in one preventive maintenance and one repair maintenance visits.

This calculation does not take into account any sick leaves, possible emergency service visits or other issues related to working days.

BASIC agreement		Potential Utilized
Service Price (PR+ Or PR+MP)	1900	
Service Engineer working days per above assemly, not travelling days	2	
Valid service agreements	6	
Service Potential in Finland	47500	11400
Machines in Finland		
25		
Service engineer working days, estimation 2 days per PR Ma-		
chines	50	12

Table 7 Service Potential in Finland per PR machines.

Above table shows that currently there is 6 agreement made in Finland, meaning that there is utilized 11400€ from total Service Potential in Finland.

In Finland Service Potential with PR and similar devices is 47500€. If on these calculations are put storages, Amada punching and laser machines there can be talk on totally different kind of service potential in Finland.

In Finland there are total service engineer working days around 50, so in Finland there is a need to have one quarter time engineer for Service Agreements with PR machines.

Amada Press Brakes there is totally over 1500 in Finland and Service Potential there is much bigger. If there is offered for all Amada Press Brakes preventive maintenance which costs 250 € and multiplying that with machine amount there is totally EUR 398 500,- Service Potential in Finland. See next table.

BASIC agreement		Potential Utilized
Service Price (Amada Press Brake preventive maintenance)	250	
Service Engineer working days per above assemly, not travelling days	0,5	
Service Potential in Finland	398500	
Amada Press Brakes totally 1594		
Service engineer working days, estimation 0,5 days per press brake	797	

Table 8 Service Potential with Amada Press Brakes in Finland.

With Amada Press Brakes there is need to have four full time service engineers in order to maintain complete theoritical potential.

BASIC agreement		Potential Utilized
Service Price (Amada Punching EM, AC)	1040	
Service Engineer working days per above assemly, not travelling days	2	
Service Potential in Finland	513760	
494		0
Service engineer working days, estimation 2 days per punching ma-		
chine	988	

Table 9 Service Potential with Amada punching machines in Finland.

With Amada punching machines there is according to calculations need for five full-time service engineers if making all preventive maintenaces by LKI Services and all potential is being utilized.

BASIC agreement		Potential Utilized
Service Price (Amada Shearing)	1560	
Service Engineer working days per above assemly, not travelling days	3	
Service Potential in Finland	230880	
148		0
Service engineer working days, estimation 0,5 days per punching machine	444	

Table 10 Estimated service potential with Amada shearing machines in Finland.

With Amada shearing machines if all potential is utilized there is a need for two full-time service engineer.

See below picture of Amada sheet metal machines in Finland, easy to calculate an estimation of potential if also those are maintained by LKI.

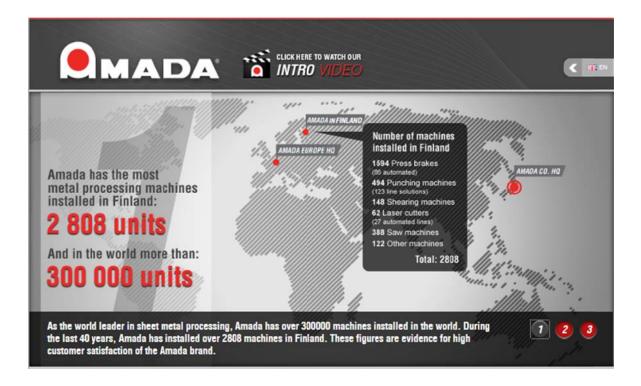


Figure 20. Installed base of Amada machinery in Finland at 7.9.2012. (www.ama-prom.fi/en/index.php. Available 15.9.2012.)

5.7 Evaluation

According to interviews made and calculation model results. It is approved by customers that they are willing to pay according to well maintained machinery, no matter how much it costs. Of course there is limits but in generally price is not the issue if machines are in production and do not break down when maintained regurlary by OEM service engineers.

Calculation model shows that there is a remarkable service potential to be utilized in Finland. If there is enough sales done, there can be sold many service agreements and many maintenances more. Seems that many customer do not know that LKI Services can really maintain also press brakes. What was considered not so nice was distances and travelling costs. Those if can be combined with other customers it really would increase customer interest on regular maintenances purchased from LKI Services.

6 CONCLUSIONS

Customer satisfaction level was very high, and that was based on their experience on high machine usability and low fault levels on LKI machinery. Many of the customers were thinking that basically that equipment's do not need to have regular maintenances from supplier. However this is highly recommended also by authorities written guide lines for regular services.

Distances between customer site and LKI are usually quite long, there was noticed that many customers prefers to use local small companies in order to avoid big travelling costs, travelling costs are invoiced according to real costs what are coming when ordering service on site from Bennäs. Also there was mentioned machine reliability. No need to serve LKI machinery basically at all. Language wall is something what need to take into more careful consideration having more Finnish people answering to Finnish customers. Flexibility on customer service was required as well. Most of the cases have been solved but some kind of more customer friendly approach is needed.

Some complaints was coming that you really need to know to whom you can call, anonymous customer service number having only English and Swedish speaking people does not serve local customers in sufficient level.

Spare parts ordering is something they were talking quite much, they can order needed, but there is a bit uncertainty of having the right parts.

Most of the customers were having only short experience of LKI Services. What kind of service organization there is and what they can maintain. Some cases were using Amada service only, due to their closer location in Salo and their wider know-how level. In the same visit Amada service engineer can maintain punching machines or laser machines and LKI machinery.

Customers assumed that LKI can maintain only LKI machinery and considered that way too expensive to use comparing to Amada who can according to customers maintain all.

Some of the customers are not so loyal towards to one service provider, if they cannot reach first provider on their mind, they'll call another till they get fast and rapid answers and help. On these situations if LKI would sell more service agreements, this kind of un-loyalty would stop.

Future development suggestions for LKI Services.

1. Service productivization

- a. Product descriptions ready and easy to access (Maintenance)
 - i. Including also Amada machinery preventive maintenances
- b. Easy packages to sell → Tools what to use when calculating offerings
- c. Sales trainings to Service Sales in order to ease customer visits
- 2. Service offering for Amada sheet metal machines and press brakes
 - a. Easier to sell more wider maintenance packages
 - b. Increases sales
 - c. Target Area first for Finland

3. Service management

- a. Need to have management which is responsible for Service development, sales and marketing
- b. Sales and service training development in order to motivate sales orientated thinking and gain more tools and knowhow for service sales people and engineers.
- 4. Service separation from Installation
 - a. Clear results and management for Service
 - Easier to manage Service coordination and sell service (why? because allocated resources are nowadays always tight doing installations)
- 5. Service organization describing

- a. Task defining for each responsibility, so that person could concentrate more on one specific area at the time
- b. More specific duties, not so much multi-tasking in order to more concentrating in Service itself for example service sales duties
- 6. Service Network Implementation
 - a. Who is controlling what areas
 - b. Who is able to maintain what
 - c. Trainings
 - i. For service engineers in order to widen their knowhow
 - ii. For represents
 - d. Recruitments
- 7. Service Marketing
 - a. Brochures
 - b. Face-to-face marketing
 - c. Service introduction
- 8. Top management support for Service development
 - a. Budgets for service sales
 - i. Customer visit target amounts
 - ii. Service agreement target levels
 - b. More visibility for Service
 - c. Personnel motivation and sales training (what proposal)
- 9. Information flow improvements towards customer
 - a. Customer leaf-let or magazine to be delivered with spare parts?

7 SUMMARY

This research has investigated service potential in Finland concerning LKI loading and unloading devices and Amada punching, shearing and press brake machines. Also investigated whether the current service pricing is in the right level.

The purpose of this thesis was to research value-based pricing, is the current pricing accepted by current customers. Additional purpose was to look into calculations how much money there really would be taken from Finnish markets on above mentioned machine types.

The research has shown that current price level is correct, not too high and not too low. Value-based pricing theory was also presented on theory framework. Value-based pricing also gives to the customers idea that they really can have what they need and value and are willing to pay for it.

Interviews and the results of this research also confirmed theory wrote by Baker, Hinterhuber, Bundchuch et. al and earlier research results being similar to them.

This research and the interviews related will be used as a base for LKI Services business area action plan and strategy planning for coming years.

Further research in this field could be a case study of the implementing process of utililizing service sales and network in Finland. There is also a need to set future targets for LKI Services. Also more detailed investigation of service potential could be in further research to be made when more experience is gained from maintaining Amada machinery.

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APPENDICES

Appendix 1. Email coverletter before making interview appointments.

Hei,

Nimeni on Minna Kiuru ja opiskelen aikuisopiskelijana, Seinäjoen Ammattikorkeakoulussa Kansainvälisen markkinoinnin johtamisen linjalla, MBA tutkintoa.

Olen tekemässä opinnäytetyönäni tutkimusta LKI Käldman Ltd. palveluliiketoiminnasta ja tavoitteena on saada selville LKI Käldman Ltd:n laitteita omaavien asiakkaiden tarve huoltopalveluille. Opinnäytetyöni ohjaajina toimivat Yliopettaja Aapo Länsiluoto Seinäjoen Ammattikorkeakoulusta ja Myyntipäällikkö Dan Liljeqvist LKI Käldman Ltd:ltä.

Tietoja tullaan käyttämään LKI Käldman Ltd:n palveluliiketoiminnan kehittämiseen sekä tutkimuksen avulla voidaan niinikään myös kehittää käytössänne olevien koneiden huoltoa ja käytettävyyttä.

Haastateltavat on valittu siten, että vastajalla on LKI Käldman Ltd:n valmistama PR laite tai muu vastaava käytössään ja joilla on aikaisempaa kokemusta huoltoyhteistyöstämme. Ja uskoisimme teillä olevan tarvittavaa näkökulmaa yhteistyömme kehittämiseksi.

Haastattelut pyritään tekemään kesäkuun 2012 loppuun mennessä, soitan teille lähipäivinä sopiakseni teille sopivasta kasvokkain tapahtuvasta haastattelusta. Haastattelun kesto on noin 1 tunti.

Haastattelussa on lisäkseni mukana LKI Käldman Ltd:n tekninen myyjä Patrick Björklund.

Haastattelu on täysin luottamuksellinen.

Vastaan mielelläni kysymyksiinne liittyen tähän tutkimukseen.

Kiitos paljon ajastanne sekä yhteistyöstänne!

Ystävällisin terveisin,

Minna Kiuru Dan Liljeqvist

MBA aikuisopiskelija Manager Sales, LKI Käldman Ltd

Mobile 040 720 4158 Mobile 020 700 9024

Email. minna.kiuru@seamk.fi email. dan.liljeqvist@lki.net

Appendix 2. Interview questions in Finnish.

Haastattelukysymykset LKI Services

- Tiedättekö mistä tarvittaessa tavoittaa LKI huollon?
- 2. Kuinka tärkeää teille on nopea vastaus liittyen huoltoon? Mikä teidän mielestänne on nopeaa toimintaa?
- 3. Oletteko tyytyväinen meidän tarjoamiin huoltopalveluihin?
- 4. Mitkä asiat ovat kokemuksenne perusteella tärkeitä teille koneen huollon osalta?
- 5. Oletteko vaihtaneet huoltoyritystä ja jos niin miksi?
- 6. Mistä piditte aikaisemmassa toimittajassa?
- 7. Mistä ette pitäneet, joita ette haluaisi meidän toistavan?
- 8. Millaisia kokemuksia teillä on jos koneenne on huollettu ja toimii moitteettomasti, voiko se lisätä myyntiänne tai kenties voitteko saavuttaa uusia asiakkaita?
- 9. Kuinka paljon voitte säästää rahaa käyttäessänne säännöllistä huoltoa?
 - a. Kone toimii eikä tule suunnittelemattomia tuotantokatkoksia
 - b. Kuinka paljon yrityksellenne maksaa jos kone on rikki eikä ole tuotannossa?
- 10. Koetteko että huollattamalla konettanne säännöllisesti, se parantaa myös koneen turvallisuutta?
- 11. Oletteko huomioineet kuinka paljon voitte säästää aikaa käyttäessänne laitevalmistajan huoltoa versus tekemällä huollon itse tai toisen palvelutarjoajan toimesta?
- 12. Kuinka paljon käytätte rahaa tällä hetkellä koneen määräaikaishuoltoihin?
- 13. Kuinka paljon käytätte rahaa tällä hetkellä koneen korjaushuoltoihin?
- 14. Mikä on teidän käytettävissä oleva budjetti koneenne huoltamiseen per vuosi?
- 15. Onko hinnoittelu oikealla tasolla tällä hetkellä?
- 16. Kuinka teidän huoltonne on nyt järjestetty?
- 17. Mitkä ovat tärkeimmät asiat teille valitessanne palveluntarjoajaa?
- 18. Huollon tarpeen tullessa, saatteko huoltoinsinöörin tarvittaessa paikanpäälle kuinka nopeasti?
- 19. Olisiko saatavuustakuu arvokas teille?

- 20. Millaisia odotuksia teillä on LKI:tä kohtaan ja näettekö meidät auttamassa haasteissanne ja mahdollisuuksissanne?
- 21. Millaisia kasvusuunnitelmia teillä on?
- 22. Jos hinta ei vaikuttaisi, millaista roolia haluaisitte meidän edustavan teidän yrityksessänne?
- 23. Oletteko huolissanne jostakin asiasta, luotettavuudesta tai tulonlähteestä joihin meidän olisi syytä kiinnittää erityistä huomiota?
- 24. Millaisia ehdotuksia teillä on meille oppiaksemme yrityksestänne sekä alastanne tarvittavan, että voisimme tarjota parhaimman mahdollisen tuen teidän yrityksen menestymisen avuksi?
- 25. Onko kysymysten aikana tullut ilmi muuta sellaista, mitä haluaisitte vielä tuoda esille?

Appendix 3. Interview questions in English and descriptions why question was asked.

25 same questions were asked from all above mentioned customers in order to find out what they think about LKI Service and their services.

Below is the list of questions asked, and an example on what the intention of the question is.

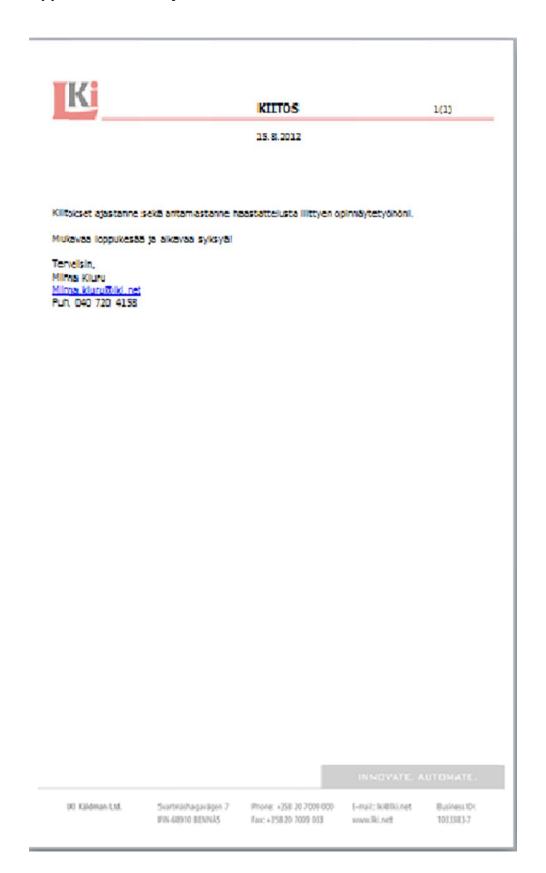
- 1. Do you know how you can reach LKI Service?
 - a. The intention of the question was to establish whether they know where to contact if they have some issues with their machinery. Also to be sure they can find needed information and what channel they are using.
- 2. How important is to have a fast reply concerning service? What is according to your experience fast enough?
 - a. The intention of the question was to find out what is fast enough service reaction time.
- 3. Are you satisfied services offered by LKI?
 - a. The intention of the question was if LKI could have some feedback about customer satisfaction with LKI services.
- 4. What issues are important to you when talking about machine service?
 - a. The intention of the question was to find out important things what customers values.
- 5. Have you changed service provider and if yes, why?
 - a. The intention of the question was to find out those not good features what customers do not like.
- 6. What things you liked with previous service provider?
 - a. The intention of the question was to find out if customers value some issues LKI maybe has not realized earlier.
- 7. What things you did not like with previous service provider?
 - a. The intention of the question was to see what kind of real features customers do not value.

- 8. What kind of experiences you have if your machine has been maintained properly, could that increase your sales or can you reach new customers when machines are maintained and are working properly?
 - a. The intention of the question was to have customer point of view about machine importance on production chain.
- 9. How much you can save when using regular service?
 - a. The intention of the question was to find out have they calculated any time savings if they use regular service.
- 10. Can you say that when maintaining machine regularly it can improve machine safety?
 - a. The intention of the question was to notify customers of regular maintenance importance also on machine safety issues and if the customers also agree.
- 11. Have you noticed how much time you can save when using OEM service versus making maintenance by yourself or by another service provider?
 - a. The intention of the question was to have customer point of view on time savings when using machine manufacturer service.
- 12. How much money you currently use on preventive maintenances?
 - a. The intention of the question was to find out the money used on preventive maintenances per year.
- 13. How much money you currently use on repair maintenances?
 - a. The intention of the question was to find out how much money customers are using on machine repairing services.
- 14. What is your budget on machine service per year?
 - a. The intention of the question was to find out how much money customer have budgeted for machine service per year.
- 15. Is LKI service pricing at right level?
 - a. The intention of the question was to find out customer opinion about current service price.
- 16. How your service is currently organized?
 - a. The intention of the question was to find out how customer has organized their service.

- 17. What are the most important issues to you when choosing a service provider?
 - a. The intention of the question was to find out the issues that are important to customer when choosing a service provider are also important when having customer already in business relation with you. Issues are really important to keep on mind and if necessary develop missing issues.
- 18. When service is needed, what is lead time in order to have a service engineer on site?
 - a. The intention of the question was to understand customer urgency and what lead time for them is fast enough.
- 19. Would availability guarantee valuable to you?
 - a. The intention of the question was availability guarantee, and could that be invoice able feature.
- 20. What kind of expectations you have towards LKI services and can you see LKI services helping you on your challenges and possibilities?
 - a. The intention of the question was to find out if there are some expectations towards LKI services what company has not yet realized.
- 21. What kind of growth plans you have?
 - a. The intention of the question was to find out customer future plans.
- 22. If price is not an issue, what kind of role you would like LKI service to represent in your company?
 - a. The intention of the question was what customer really would like to achieve from LKI services.
- 23. Is there some worries, or reliability issues or income sources LKI should be aware of more carefully?
 - a. The intention of the question was to find out all issues if there is any what LKI should be aware of.
- 24. Do you have some suggestions for LKI service in order to learn more about your company and field all necessary that LKI services could offer the best possible support to your company?
 - a. The intention of the question was if there are some development ideas for LKI services from customer point of view.

- 25. Is there anything else on your mind what you would like to share with LKI?
 - a. The intention of the question was if there is something popped on customers mind they could at the end share their ideas and thoughts.

Appendix 4 Thank you cover letter after interviews.



Appendix 5 Interview questions in Finnish according to Torkzadeh et. al model when evaluating calculation model.

- Onko laskentamalli joustava?
- 2. Tarjoaako se ajantasaista tietoa?
- 3. Onko laskentamallin virheet helppo korjata?
- 4. Pidätkö laskentamallin käyttämisestä?
- 5. Onko laskentamallin antama lopputulos esitetty hyvin?
- 6. Onko laskentamallia hankala käyttää?
- 7. Onko tieto selkeästi esitetty?
- 8. Oletko tyytyväinen mallin tarkkuuteen?
- 9. Oletko tyytyväinen mallin ulkonäköön?
- 10. Onko malli tarkka?
- 11. Tarjoaako laskentamalli tarvittavaa tietoa?
- 12. Tarjoaako laskentamalli ajantasaista tietoa?
- 13. Luotatko laskentamallin antamaan tietoon?
- 14. Saatko tarvittavaa tietoa oikeaan aikaan?
- 15. Onko laskentamallin tulos relevantti?
- 16. Onko laskentamallin tulos luotettava?
- 17. Antaako laskentamalli liikaa tietoa?
- 18. Onko laskentamallin informaatio ajantasaista?
- 19. Antaako laskentamalli juuri sitä tietoa mitä tarvitset?
- 20. Onko laskentamalli helppokäyttöinen?
- 21. Onko laskentamalli käyttäjäystävällinen?
- 22. Onko laskentamallissa raportit valmiina?
- 23. Antaako laskentamalli tarkalleen sitä tietoa mitä tarvitset?
- 24. Onko systeemi tarkka?
- 25. Onko tulos helppo ymmärtää?
- 26. Onko laskentamalli mukava käyttää?
- 27. Onko laskentamalli vaikeaselkoinen?
- 28. Kohtaako sisältö tiedontarpeesi?
- 29. Pitääkö saatua tietoa korjata?
- 30. Onko laite järjestelmäriippuvainen?

- 31. Haluaisitteko että laskentamalli muokattaisiin uusiksi?
- 32. Saatko tietoa riittävän nopeasti?