How Provider Value is Perceived in regards to Integrated Product Service Offerings and why – A case study

Mattias Ödling

Supervisor: Tomohiko Sakao
Examiner: Erik Sundin

ISRN: LIU-IEI-TEK-A--15/02322—SE

Department of Management and Engineering
Division of Environmental Technology and Management
ABSTRACT

As companies grow larger and become more international, it is likely that it comes to a point where it would be cheaper to produce on site, or at least have distribution centers, rather than having a centralized production that requires long range shipping. As this occurs, there is a wide range of challenges that the company must face, however these challenges are by now well documented and while not to be underestimated and called “easy” it is nothing new as a wide range of companies have done it before. One aspect that however is less known is the influence that external differences has, in other words factors that would produce a differing result even with the exact same internal setup, on the perceived aspects (referred to as Values in this work) from the providers point of view. In particular what is interesting is the perceived positive impacts above expectations that is gained from having external differences. To be able to better understand and quantify this impact the term “Provider Value” has been created and is being researched towards understanding what Values exist and how they are being affected.

Provider Value (PV) is a cutting edge concept within eco-design research that this work is based on and in particular ProVa – Provider Value Evaluation for Integrated Product Service Offerings (Matschewsky et al. 2015) is the latest step to date towards creating the tools needed to increase the utilization, and reap the benefits, of PVs. Another interesting and relevant aspect to PV is how Product/Service System (PSS) could be an essential part in paving a new way of avoiding increased environmental impact while having economic growth. This is done by adding services on top of already existing products (Sakao et al. 2009).

To find out more about what kind of external factors that might be behind the differences a case study was conducted, interviewing employees at two companies within one concern in Sweden and Japan. The results of this work indicates that if the company want its PVs to remain the same the main obstacle is external economic differences. In this particular study it is also clear that differences in business model and company structure has a big impact. With all the discussion regarding environment it was on a surprisingly low level of interest at both companies and what mattered was that the products cleared the minimum requirements, nothing more, as “any additional return is hard to estimate”. If PV keeps growing and tools are made to assist, this could not only help simplify the transitioning to other countries and help utilizing existing Values from the start, it could also increase the utilization in general, in particularly in regards to the Environment.
Acknowledgements

Highest gratitude to responsible parties at both companies for all the assistance they provided as well as the opportunity to conduct the interviews, on scene, without any complications.
Table of Contents

1.Introduction ............................................................................................................. 1
  1.1.Problem Background ......................................................................................... 1
  1.2.Research Purpose .............................................................................................. 2
  1.3.Thesis Structure ................................................................................................. 2

2.Research Method ..................................................................................................... 3
  2.1.Procedure ........................................................................................................... 3
  2.2.Limitations .......................................................................................................... 4
  2.3.Relevant Literature ............................................................................................ 4

3.Introducing Provider Value ..................................................................................... 5
  3.1.Defining Provider Value ..................................................................................... 5
  3.2.How Provider Value is measured ........................................................................ 8
  3.3.The “correct” amount of Provider Value ............................................................. 8
  3.4.Basic Business Model Definitions ..................................................................... 9
    3.4.1.Sale .............................................................................................................. 10
    3.4.2.Rental .......................................................................................................... 11
    3.4.3.Mixing Sale & Rent ...................................................................................... 12
    3.4.4.Service ......................................................................................................... 13
    3.4.5.Retailers ...................................................................................................... 13
  3.5.Known types of Provider Value ......................................................................... 13
    3.5.1.Environment ................................................................................................. 14
    3.5.2.Customer Relations ...................................................................................... 14
    3.5.3.Information .................................................................................................. 15
    3.5.4.Infrastructure .............................................................................................. 16
    3.5.5.Time-To-Market ........................................................................................... 16
    3.5.6.Monetary Value ............................................................................................ 16

4.Method of data collection/analysis ......................................................................... 18
  4.1.Data gathering process at ‘Company S’ ............................................................... 18
  4.2.Data gathering process at ‘Company J’ ............................................................... 19
  4.3.Ranking of Supra-Categories ............................................................................ 22

5.Found internal and external Differences ............................................................... 25
  5.1.External Differences ......................................................................................... 25
    5.1.1.Customization possibilities ......................................................................... 26
    5.1.2.Energy consumption ..................................................................................... 26
    5.1.3.Cost of employees ....................................................................................... 26


Table of Figures

Figure 1: Outcomes for membership example 6
Figure 2: The most prominent connections between the production cycle… 13
Figure 3: The basic concept for the comparison 18
Figure 4: The original PCVA-table from the previous study at ‘Company S’ 19
Figure 5: The PCVA-table PRIMARY used at ‘Company J’ 21
Figure 6: The corporative structure of ‘Company J’ 25
Figure 7: ‘Company J’ / ‘Company J’s dealer business concept 29
Figure 8: Internal Product flow 31
Figure 9: Explanatory PCVA-table used at ‘Company S’ 48
Figure 10: Image to help the interviewee… 50

Table of Tables

Table 1: Position and number of interviewees in the ‘Company S’ case. 19
Table 2: Position and number of interviewees in the ‘Company J’ case 22
Table 3: Supra-Category comparison 36

Table of Appendix

Appendix 1 – Business Concept 40
Appendix 2 – Interview procedure (‘Company S’ + ‘Company J’) 41
Appendix 3 – PCVA table (‘Company S’ + ‘Company J’ PREL & SCND) 51
ABBREVIATIONS

BnS = Brand and Size
CR = Customer Relations
CV = Customer Value
IPSO = Integrated Product Service Offerings
LiU = Linköping University
LTT = Long-Term Thinking
PV = Provider Value
PSS = Product/Service Systems
PCVA = Provider Customer Value Analysis
RTO = Rent-To-Own
SCM = Supply Chain Management
TtM = Time-to-Market

WORD LIST

Company J = Mother company in Japan
Company S = Daughter company in Sweden
Company A = American daughter company of ‘Company S’
1. **Introduction**

1.1. **Problem Background**

Customer Value (CV) has been a well-known concept for several decennium by now and is being utilized widely, see Value Added Service (VAS) for an example of this. A simplistic way to describe CV is that the customer is getting more than the customer assumed (s)he would get. Ranging from a cheaper price to better service and/or quality; anything that positively influences the customer above expectation (Zeithaml, 1988).

From the end users perspective CV is all that matters, however from a wider perspective CVs are only a part of the existing potential Values within Product/Service System (PSS). Research within PSS has shown, while not being limited to the study of Values, that Values unrelated to the customer also exist and can have a large impact, both by creating positive effects as well as reducing negative ones. The environmental aspect is one example, showing that economic gains can be had without using materialistic resources (Sakao et al., 2009).

Thus in the same line of thought as with CV, the next step is to see it from the opposite perspective, from the provider’s point of view. This is being referred to as Provider Value (PV) (Matschewsky, 2012) and while CV has a lot of variables and complicity to it, PV is not only about finding Values beneficial to the provider but also doing it while keeping in mind how it influences any related CVs. PV is also expected to be dependent on both the type of company (e.g. size, structure, dependence on other companies etc.) and the type of product and/or service provided.

From Matschewsky (2012), we can see that for a long time the only PV that mattered was the direct profit, and more precisely the Monetary Value (MV). The thought process was that the more the MV the more profit as long as the total cost per unit, or time unit for a service, remained unchanged. This line of thinking makes for a very simplistic way to address if a product and/or service is profitable or not and the importance of MV for a company should not be underestimated. However, while creating a simple and straight-forward calculation, this “Fire-and-Forget” (i.e. Produce-Deliver-Forget) strategy also makes feed-back and other, direct or indirect, effects count as zero value regardless of the potential gain or reduced loss they might contribute to later. Resulting in a potential waste of Value for the company.

Quoting Publilius Syrus, first century B.C. “Everything is worth what its purchaser will pay for it.”, this shows that the same line of thought existed even then. However, by redefining “pay”
(i.e. not limiting it to merchandize or money) it makes a good core for what perceived PV stands for today; *how much higher I value what I get than what I have to give*, where ‘I’ is the company.

Research regarding PV is however still in its infancy and progressing as cutting edge research within eco-design, which this work is highly based on. The research have resulted in a tool to help measure the impact of PVs, called ProVa, taking a major leap towards being able to utilize PVs to their full extent (Matschewsky et al. 2015). While this is a significant step towards understanding and quantifying PVs the need for research within this field is still ever present. One aspect for example is the difference of how the perception is dependent on country, both economic and cultural.

Therefore, by comparing equal-sized companies on the same market with similar products and/or services to each other it is likely that the utilized PVs would be similar in general. However, what if one company with one type of product and/or service instead was acting in two vastly different markets, and therefore with potentially differing business models and circumstances, how would this influence the perception and utilization of PVs at the company? To find out a case study was conducted as part of this work.

1.2. **Research Purpose**

The purpose of this work is to enhance the understanding of PV. More concretely, it is to investigate how and why two similar companies are differing, regarding perceived PV, from each other and in particular to see if, and how, surrounding circumstances influence the number of perceived PV and the level of utilization of found PV.

1.3. **Thesis Structure**

In Section 2, the scope and limitations of the work is explained. Next, Section 3 defines PV for this work and explains short both about the different business models and known types of PV. Section 4 covers the methodology of information gathering. Section 5 is internal and external differences of the case study. Section 6 is what results have been found and Section 7 is the conclusion and future work.
2. **Research Method**

The steps to this work are as follows:

i. Identify what is presently perceived as PVs at the companies.

ii. Identify through what product components and service activities that the PV is created.

iii. Identify differences regarding the perceived PVs between the two companies.

iv. Identify the reason(s) for the difference in perception, and utilization, of PV, in particular by looking at what impact the difference in business models has.

2.1. **Procedure**

The first step is to define what the term PV is referring to in this work and, based on the PVs described in Matschewsky (2012), define and describe where and how PVs exists. This will be conducted with the help of the previously mentioned work, academic literature and relevant homepages for providing examples of the PVs being utilized. Important to note is that this is not to say that this work will be limited in any way to the PVs mentioned in Matschewsky (2012), only for helping in defining what PVs are and providing examples.

Next is to gather information for a case study between two similar companies (i.e. product type and size), ‘Company J’ and ‘Company S’, in regards to their situation concerning PVs. The ‘Company S’ s data is provided from an earlier study at Linköping University (LiU) done by conducting interviews at ‘Company S’. The ‘Company J’ s data are gathered by the author’s interviews at ‘Company J’ in Japan. Both cases, while slightly differing, utilized a sort of questionnaire called a PCVA-table (covered in 4. Method of data collection/analysis and full-scale tables can be found in Appendix 3). Questions such as “could there be other economical or technical gains by not utilizing a certain available PV?” or “are there regulations or other obstacles that makes utilizing potential PVs to its full extent or at all?” are also of major interest.

Following is to interpret, validate and rank the interview results to simplify for the comparison. While this work is made at, and with the help of, LiU it is not in any way representative of any official view of LiU.

Lastly is a comparison by the author between the companies and their perceived PVs. What differences exist from the collected data and what is the reasoning behind it? In particular, what can be attributed to the difference in business model?
2.2.   Limitations

Limited to academic literature, general webpages (i.e. were suitable academic literature cannot be found), company specific webpages and any information that can be gathered from the interviews (i.e. from both cases; ‘Company S’ and ‘Company J’).

Further, due to the potential existence of an unlimited amount of smaller reasons (i.e. local laws, post-production-start logistic changes etc.) anything not found relevant enough will be omitted unless they are found during the interviews and then deemed to be severe enough to have a significant impact, on the PVs, within the scope. In the selected cases it will be mentioned specifically. This work does therefore not claim to cover all differences, only differences found and perceived to be major enough to have an actual impact.

More practical limitations (i.e. number of interviews were limited etc.) exists in regards to the interviews both at ‘Company S’ and ‘Company J’ and are covered under their respective part. Another important note is that the results do not represent the company as a whole or even the departments that the individual interviewees belong to, but is only to represent the individual opinions of a person in that particular position.

2.3.   Relevant Literature

Since the objective spans several distinct areas; in particular technical but in addition also marketing, economics and culture in general, a wide range of literature will be looked at. Supply Chain Management (SCM) and Product/Service System (PSS) related literature will be the most prominent sources with the addition of company specific literature and basic economics/marketing literature.
3. **Introducing Provider Value**

3.1. **Defining Provider Value**

To paraphrase Zeithaml (1988), Customer Value (CV) is getting more Value by spending (i.e. in exchange for) less of another Value. Value is in this case anything that the individual customer has and wants (e.g. amount of money, the gain a product or service provides, time or energy saved/spent etc.) which is then scored based on how the customer perceives the level of need of the Values. An example used by Zeithaml (1988) is that of how some customers spends a large amount of time, energy, gas money etc. to collect and use coupons at (a) certain(s) store to save as much money as possible. The perceived Value is thus that the time and energy is worth less, to these particular individuals, than the money saved minus the gas money. At the same time other customers choose to not even look for coupons and to knowingly get a more expensive product/service based on close-proximity or practicality. In this case the perceived Value of time and energy is regarded as more having more worth to the individual than the perceived Value for the additional money spent. In short perceived CV is created when the customer feels (i.e. perceives) that the Value exchange is *not* equal, but in his/her favor.

PV is in this work defined as the opposite of the above mentioned Customer Value (CV). However, it is important to note that while opposites if seen as a spectrum, more correctly would be to call it the providers *equivalent* of CV where instead of looking at the perceived value for the customer the value for the provider is the focus. As mentioned in 1.1 Problem Background, while the Values might differ the general idea is the same, where both parties are set to *in their mind* make a better deal than what they would perceive as *equal*. The customer wants feel (i.e. perceive) that they give less Value (e.g. money) to get more Value (e.g. product/service) while at the same time the provider wants to feel (i.e. perceive) that they get more Value (e.g. money) while giving less (i.e. product/service). This, on paper, looks like a contradiction, on the contrary of being actual opposites however they are not only being *not necessarily* counteractive but a lot of the positive effects of PVs does in fact coincide with increased CVs.

A practical example of this is the use of memberships; whether it be chains (e.g. supermarkets, pharmacies etc.) or brands (e.g. Libero, Finnair etc.). When an opportunity to join a discount-giving membership is presented to a customer there are three categories that the customer can end up in based on their *perceived* Value of their personal information (i.e. referred to as privacy below):
- Does not want to “pay” the information (i.e. perceives the Value of the privacy higher than the perceived Value of the reduced cost) => Decides to not join =>
  - Change in neither CV nor PV is created. The customer buys the product without using the membership and thus a standard exchange is made between the customer and provider; no more no less. See Case 1 in Figure 1 below.
- Finds the discount “worth” the information while skeptical (i.e. the perceived Value of the discount is only valued slightly higher than the Value of privacy) => Decides reluctantly to join (i.e. to “pay” the information) =>
  - CV is partially created (i.e. perceived Value gained from the discount minus the perceived lost Value in the form of privacy is positive but not optimal)
  - PV is fully created (i.e. the only thing that matters to the providers Value in this case is the fact that the customer uses the membership).
- Does no mind “giving” the information (i.e. sees the information as, or close to, zero value) => Decides to Join =>
  - Both CV and PV are fully created. The customer perceives the exchange as favorable as the price was less than expected while at the same time the provider gets the information they wanted. This is represented by Case 2a and Case 2b in Figure 1 below.

![Figure 1: Outcomes for membership example](image)
Therefore, to sum it up; the company is reducing its profit (i.e. by reducing sale price in this example) on purpose in exchange for the possibility, and right, to gathering information about the customer. This is done with the expectancy that the information in turn will, directly or indirectly, return the decrease in profit from the initial purchase with interest. In other words; the company is aiming to increase profit long-term by reducing (i.e. investing) it short-term. Two examples of this being put into practice are Hemköp and Finnair:

- With Hemköp’s “bonusklubbsprogram” the member gets a 1, 2 or 3% money return on their purchases depending on how much they spend during that particular month, more purchases => more information => more Value for the provider, at any of Hemköps stores (Hemköp, 2014).
- With the Finnair frequent flyer program “Finnair Plus” points are gained when purchasing flights, upgrades and additional services/products. The collected points can be used to, in full or partly, buy products or pay for flights (Finnair, 2015).

These are just two examples of the utilization of this type of PV but there are endless of additional examples of this (e.g. ICA, Libero, SIBA etc.).

While omitted in the example above another potential Value for this case is the extra work that the customer has to put in to use the membership card (connected to the example in the beginning of this chapter). Remembering to bring it with and so on and while small this might be the difference between reluctantly doing it and not doing it. A countermeasure for this is being utilized in a number of places; SIBA for example only required a general ID to be able to utilize the service (SIBA, 2015) and Hemköp has the option to link the membership card to a regular credit card (Hemköp, 2014).

Memberships could also be used, in conjunction with the gathering of information or completely separately, to create a “loyal customer club” to encourage favoritism or “hype” towards the company or brand. Where the customer is not necessarily receiving any additional value at all but still chooses to follow the particular company/brand/product. One example that might be easy to relate to are fashion where a “real” piece of brand clothing is much more expensive than an exact replica that is “un-named”. Japan in particular, for good or bad, is seen to have a strong bias towards brand name products even with a negative price difference towards the generic product (Takizawa et al., 2015).

These, membership and loyalty, are two examples of presently existing PVs. In the case of this work, however, both the context and the scale is quite different as buying/renting vehicles is a
much higher level of investment than gaining discounts grocery shopping. Therefore the examples of PV should only be seen as a way to get a basic understanding of the individual PV and its core principle unless specifically stated otherwise. The actual found PVs at ‘Company S’ and ‘Company J’ will be stated and discussed in 6. Interview Results and forward.

3.2. How Provider Value is measured

One of the main problems of PV, and CV as well in some cases, is to measure the actual effect it has; the Value profit. While research is being conducted, as seen in Matschewsky et al. (2015), there is nothing found that would indicate that an actual way to accurately quantify the Value already exists holistically. Thus the following is an interpretation by the author of available data such as results from the study at ‘Company S’ in 2014, Matschewsky (2012) as well as the previously mentioned Matschewsky et al. (2015). Therefore, this is not an official definition but a definition of how the measuring is interpreted in this work and the basis for the conclusions.

The first thing that can be said, once again referring to Zeithaml (1988), is that rather than putting an actual number on the Value itself the most important part is to see it in comparison to the Value it could bring. Therefore, the first way of measuring is by perception based comparison which can show patterns, this can then be improved by using economic tools (i.e. a reduction of X profit today is worth Y in one year etc. with standard estimations) and by experience gathered from other or earlier utilizations. This said however, a certain level of unknowns will still remain. For example, if there was a way to sell an additional Z units compared to present amount, would a company that makes 100 Z a year have the same perceived Value of this increase of Z units as someone that makes 10 000 Z a year? Then there are other potential factors; production possibilities, distribution etc. Thus more correctly than calling it “measuring PV” would be to call it “estimating PV” as, unless targeting a very specific group, there will always be differences in scoring based on observation and/or perception. This is also one of the reasons, as stated in the beginning of this work, that before all that mattered was the actual profit as it was simple to get and accurate, the opposite of what most other PVs are. Consequently, for now measuring PV is estimating PV and in this work, it will be based on the individual perceptions of the interviewed employees.

3.3. The “correct” amount of Provider Value

So how much perceived PV is the correct amount? How far should the company go to try and increase the PVs? In the end of 1960, Theodore Levitt stated “People don’t buy products; they buy the expectation of benefits”. In reply to this Meier et al. (2010) correctly states that “The
problem of this statement is to measure the expectation of benefit and to gain the highest profit out of it.” While this is very true, Levitt’s statement fits the PV line of thought well; whether it is a product or a service, the main motivator, for both the customer and the provider, is the expected perceived benefit and that it is valued higher than the cost of procurement. Consequently the main goal, based on Zeithaml (1988) and Philip Kotler through ITmedia (2012), for the provider is to find the middle-ground where:

- The increase in perceived PV and perceived CV are in total valued greater than the decrease in another PV (e.g. profit) for the provider (i.e. the total increased gain from PV and CV must exceed the “cost” of implementation).
- The increase in perceived PV is valued greater than the loss in perceived CV (i.e. the gain from the increase in PV must cover and surpass the loss from the decrease in CV).
- The perceived PV for the provider and the perceived CV for the customer must both be positive for an exchange to occur. A negative value would not only mean that it is not actually a PV/CV, but also that the provider and/or customer perceives the exchange, in total, unfavorable (i.e. not worth) and thus would never occur.

Thus the “perfect” or “correct” amount is not a number but an area where the end product is positive. Optimal is to try and increase PVs as long as increasing a PV doesn’t lead to a total decrease in PV (e.g. in the case of membership there will be a limit of when increased discounts doesn’t give enough additional information to justify the cost) or a decrease in CV that in turn will have more negative effect on the company than the gain from the increase in PV (e.g. an increase in price is only worth it as long as increase in profit can cover the decrease in sales).

An important, and explanatory, side note is that reducing negative effects has as much of an impact towards a Value as increasing positive ones.

3.4. Basic Business Model Definitions

There are several business models used today; Sale, Rental, Sale & Rental mixing and Service and there are pros and cons with each practice. The main point however is the customer’s estimated future consumption of the product and that the provider must keep this in mind when considering what type(s) of business model to utilize (Knox et al., 2009).

It is also important to realize that a product could be divided into two different categories, perishable and durable goods which will greatly influence both the provider and customers’ inclination to buy or rent (Poddar, 2004). In this work however, to avoid creating an almost
infinite amount of circumstances the standard for a product will be industry related machinery and seen as the perfect middle ground between durable and perishable (i.e. needs service and repairs but does not have a ‘best-before date’).

There is also a topic of sessional products/services, one example of this is the clothing market where winter clothes can be produced during summer to be put on sale in winter and the other way around for summer clothes (Thomassery, 2010). This will not be relevant in this work due to the year-a-round produce-and-use potential of the produced vehicles.

The different models are referring to, where applicable; products, services and accessibility to facilities with the services that can apply.

3.4.1. Sale
The main point of selling is its simplicity; as soon as the product is delivered, or completed in the case of a service, and the payment has been received the transaction is completed and there are no more obligations unless specifically stated otherwise. From there on all types of additional services and their extent are provided based on:

- What the customer wants to receive and would be ready to pay (i.e. pay adequate according to the provider) for.
- What the provider wants to, and has the ability to, provide.

The customer has the option to (when the provider can and will provide it):

- Utilize full service from the provider of the product. Maximum revenue created for the product-provider.
- Only use the necessary minimum amount of service (i.e. exclude all non-essential services). Some revenue created for the product-provider.
- Invest so that all, or some of, the service can be done “in-house”. Reduced revenue or purchase price only as revenue for the product-provider.
- Use other providers that can provide necessary services. Only initial purchase as revenue for the product-provider.

Two examples of practices where the provider has managed to somewhat bypass this problem (i.e. being reliant on the customer) and instead the customer becomes provider-locked with the purchase:

The Console market (exclusivity): It is widely believed, and backed by both a wide range of news outlets, for example c|net (2013) and Ps4daily (2013) with several comments by the
companies themselves, that the consoles themselves, in this case the Playstation 4, are intentionally running at a net loss for the company per sold unit. Only looking at the console itself it seems strange but looking at the bigger picture; the cheaper the console is the more likely people are to buy it. In turn if a customer buys that system then they are going to be inclined to buy games and accessories for that particular system. While only one console in total is needed, the amount of games that could be purchased are almost unlimited. This also enables the monthly purchase of a service called Playstation Plus (Engadget, 2014) that is exclusive to the Playstation systems giving free games and other benefits (Playstation, 2015). This also coincides with exclusivity where certain games can only be played on a certain system. Thus creating a demand to have the particular system in order to be able to play the game in question. Consequently, a low price of the console will not only decrease the sales for the competitors, it will also increase the revenue from related merchandize.

**The Printer market (refill):** When a product itself is cheaper than the refill for the product it is, while not necessarily true, likely that the company’s business model is to sell the refill and not the actual product. The printer market is a good example of this where the printers themselves cost less than the refill ink for the particular printer according to PCWorld (2009) and Deseret News (2012). When the printer is out of ink the customer has to choose to either buy a new printer or to buy the refill (or take the risk of using non-brand knockoffs at the risk of ruining the printer itself according to the PCWorld article). This does create a weak monopoly of sorts where as long as the ink providers doesn’t set an unjustifiably high price, the customer will be inclined to buy it regardless of their opinions.

Other examples of how this is increasing is with razors with razorblades or coffee machines with DRM locks (The Globe and Mail, 2014).

### 3.4.2. Rental

Renting on the other hand, while not as simple (i.e. straight-forward) as selling and long term the most expensive alternative for the customer, has flexibility and economic “freedom” (e.g. it can allow customers to use machinery or facilities they would not be able to afford if buying was the only option).

**Pay-per-use** – As Lay et al. (2009) states based on a case study “… suppliers offer their customers the right to use the equipment without having to purchase it. The remuneration is based on the use of the machinery on a ‘production-based payments’ or ‘pay per use’ basis
depending on the relevant contract clauses. After the contract period, the customer has the option to buy the equipment or to give it back to the supplier.”

**Pay-per-duration** – Lay et al. (2009) also expresses the same line of thought as Levitt mentioned in 3.3 The “correct” amount of Provider Value, however from a purely provider-, and not a seller-, standpoint with “The customer buys the functionality of the product instead of buying the product. As a result, the producer retains the ownership. The producer is also responsible for maintaining the product and the operational location is not fixed. The equipment can be located either at the manufacturer’s site or at the customer’s location.”

A “next step” to this that has been increasing lately is the option referred to as **Rent-To-Own (RTO)**” which is described by Anderson et al. (2009) as “…customers gain immediate access to new or used merchandise … with neither a credit check nor down payment in exchange for a rental payment … The agreement has a fixed time period, usually from 12 to 24 months; however, the customer may terminate the contract at any point by returning the merchandise or by using a lump sum payment option. Should all payments be made, or the early purchase option used, the customer takes ownership of the merchandise.” A practical example of this can be seen in the cellphone market where the customer can opt to pay an increased monthly cost to the service provider (i.e. carrier) for a set time period. In return the customer get to use the phone limitless from day one but not actually owning it until after the last payment is done. For the more expensive phones there is also the option to reduce the monthly cost by paying an increased start fee (Telia, 2015).

**3.4.3. Mixing Sale & Rent**

As an alternative to only going in one direction, by both selling and renting the company can, assuming that the type of product permits it, cover both the frequent and occasional users by offering a fixed-fee plan and a pay-per use plan. Thus maximizing the profit for all involved. “Offering both licensing variants…” (i.e. software in this case) “…concurrently allows the software vendor to sell his product at different prices to customers for which the participation constraint is binding (occasional users) and customers for which the incentive compatibility constraint is binding (frequent users), according to how much they are willing to pay for it” (Postmus et al., 2009). Other examples of businesses to regularly utilize more than one type of business model are gym memberships and pool fees (Knox et al., 2009).
3.4.4. Service
As stated in Meier et al. (2010) “Economical motivation lies in increasing profit by delivering services and not just merely selling products.” Another alternative is to specialize in providing service to products the company has no actual ties to. Service, in comparison to the average product are to be considered as “perishable” without any possibility to use at a later date (Aurich et al., 2010).

3.4.5. Retailers
Retailers consists of either traditional retailers (i.e. physical stores) and/or electronic retailers (e.g. Amazon, Rakuten etc.). The latter being a continuously growing way to become more flexible to changes. Lately the utilization of a mix between these two types of retailers are increasing (i.e. having both physical stores and net order possibilities) (Qu et al., 2014). Close relationship between provider and retailer can give other good values such as information and knowledge sharing. It also enables the provider to focus on its product/service and the retailer to focus on selling (Praharsi et al., 2014).

3.5. Known types of Provider Value
At present there are six types of PVs defined based on Matschewsky (2012) illustrated in Figure 2 below. As mentioned in the definition of PV, the type of PV that is utilized is highly dependent on the type of company (e.g. business model, type of product/service etc.). Here on are examples of the individual known PVs that as to serve as concrete examples of what the respective PV could be. This is to both help give a bigger picture what PV is and to help encourage a PV-type of thinking when interpreting the results.

![Figure 2: The most prominent connections between the production cycle and the known PVs.](image-url)
3.5.1. Environment

The company is the one that has to decide how much they perceive it is worth to have the positive effects (e.g. good-will etc., stated below) or avoiding the negative effects (e.g. fines etc., stated below) of the particular environmental effect. In other words; how much they think they will gain/save based on how much they will invest.

**Gaining positive effects:** Good-will of environmental friendliness. If this is by reducing CO2 exhaust, reducing gasoline usage, using environmentally friendly raw material or recycled material etc. does not matter. From an environmental PV standpoint they are all the same as long as it is known to “the public” that the company is trying to reduce the negative impact on the environment. “Green consumers” in particular would not only view environmentally-friendly actions as positive but would also be ready to pay extra for it. In studies done 60% of the people questioned would be ready to pay up to 16.8% more in premium to have the environmentally friendly alternative (Gu et al., 2015). This is also backed by the increase in number of eco-products that are available and being sold during the last decade (Hitachi, 2015).

**Reducing negative effects:** Being a step ahead of the “environmental curve” (i.e. minimum environmental requirements) as raw material is decreasing and global warming is becoming more and more of an issue by “future-proofing” the environmental impact. As Matschewsky (2012) states in the case of energy “… energy consumption of components and offerings is an essential factor. Wasteful management of energy-resources might lead to taxation by government authorities or disadvantageous positioning in the market.” Thus by making sure, as a company, to be well clear of the lower limit the risk of ending up under it due to changes is reduced drastically.

3.5.2. Customer Relations

Both the provider and customer are benefiting from good Customer Relations as Jurate et al. (2014) states “the company gains competitive advantage and the customer has greater satisfaction which leads towards being loyal to the company”. However, not only is the perception of Customer Relations (CR) varying from customer to customer (i.e. what increases the CR for one customer might not be the same for another), the amount of CR created is also highly individual and dependent on the type of product/service. Consequence, while CR is very important, the change in CR is both hard to accurately measure and might not justify the investment as even researchers are disagreeing in the connection between value creation and customer loyalty (Jurate et al., 2014). The effect of enhanced CR is the increased chance that
the customer will not only return him-/herself (e.g. to buy more, buy accessories, increase services etc.) but also recommend the product/service to others. Examples of ways to enhance CR:

- Lowering the price (i.e. giving discounts) to customers who keep returning, to buy a products or utilize a service, or are buying a large amount. Encouraging people that more, and/or more often, is better by showing themselves being flexible with the price on an individual level.
- Creating a simple and/or enjoyable experience when the customer is browsing, purchasing or utilizing a product and/or service. Often used together with jingles, images or even specific colors to create a connection to the company (Archana et al., 2013).
- Customer loyalty by membership with discounts, cash returns or by creating hype in those cases where the brand is well-known and respected enough. As stated by Praharsi et al. (2014) “…encourages a willingness of consumer to forego their own interests, to a certain extent, in the interests of maintaining their relationship with the retailer” and “…emphasizes a consumer’s desire or intention to repurchase”. Other factors that, direct or indirect, affects customer loyalty are, according to Arikan et al. (2013); Service quality, Corporate Social Responsibility, Customer-Company Identification and Customer satisfaction.

As mentioned these are, for the sake of being easy to relate to, on a very end-customer level where the business model is to sell straight to the customer. For the type of company aimed at in this work more fitting examples of what is relevant to CR is as stated in Matschewsky (2012):

- Service contracts in the areas of maintenance, repair etc.
- Service-contracts that provide updates for a defined period of time
- Physical components that no competitor can provide (patent-protected etc.)
- Component aids or is even essential to the integrated design of the product-service system

3.5.3. Information

For a product the producer wants it to be usable the set amount of time, not longer if possible but definitely not shorter. As the perfect situation for the provider is to have the product work as well as possible for just as long as the customer can expect it to be. True or not, it is often said that lightbulbs could easily be made to last longer but would then decrease the need for replacement sales (Qi et al., 2014).
For a service it could give insight to additional opportunities, perhaps the customer would like more services but are unaware that the provider can provide those.

3.5.4. Infrastructure

From the work by Matschewsky (2012) there are three major types of infrastructure which each their individual PV potentials:

Manufacturing infrastructure: Everything that can enable or simplify the manufacturing possibilities as close to the desired location as possible is PV and the less the company has to pay to fulfill its desire the more of a PV they enjoy.

Sales infrastructure: To be present at the relevant market for as small of an expense as possible.

Service infrastructure: To be able to minimize the expenses while covering all service duties.

In short Infrastructure PV is to have as much necessities as close as possible for as small amount of investment as possible. A further increase in PV is to be able to utilize the same resources for as many tasks as possible.

3.5.5. Time-To-Market

As products and/or its components in general quickly decreases in value due to more advanced versions being developed continuously (e.g. electronics, automobiles, games etc.), decreasing TtM not only increases the competitiveness of the product itself but also frees personnel and resources to start working on the next project (Alfonso et al., 2008). TtM means the whole period from where the product idea is conceived to where it is possible to ship it to a customer or retailer. Improving TtM means to decrease the time of the steps in production, assembly, packaging and, depending on the product and business model, delivery. Alfonso et al. (2008) also states that “Early product introduction improves profitability by extending a product’s sales life and allowing development and manufacturing cost advantages.” By investing in reducing TtM the company will get an increased amount of competitive edge on the market.

3.5.6. Monetary Value

As stated in company specific literature, “… in a market-driven economy the only thing a company needs to worry about is making money – as much as possible … That is the goal. In fact, any other goal will lead to a distortion of the free market.” Implying that no matter what kind of company, what product or service and how (much) PV is utilized; number one must still be that the total MV (i.e. product price plus any additional service revenue) covers the total production cost per unit, including expenses for providing services when applicable, and thus
brings a profit. For services this could be translated into that the agreed compensation must be higher than the cost of the personnel (e.g. salary, commute, equipment etc.). This is in particular relevant to PVs as no profit means no company long-term and no company means no flexibility to even consider using PVs.
4. Method of data collection/analysis

In Figure 3 below the basic concept for the data collection process is shown. An Activity or Component is, depending on the type of business concept and business model, directly affecting a Value. The goal is to then have the interviewees score these Values, based on the Activities or Components relevant to their occupation, from both a provider and customer point of view.

![Figure 3: The basic concept for the comparison.](image)

4.1. Data gathering process at ‘Company S’

The data, including information regarding the gathering method, at ‘Company S’ was received from the supervisor and is based on a study conducted at ‘Company S’ in Sweden in 2014. A shortened explanation of the method is stated below.

The interviews were conducted with the use of a deliberately empty data gathering table (referred to as a “PCVA-table” in this work, see Figure 4 below) as to avoid influencing the interviewee to the views of the interviewer (i.e. to decrease the risk of having any preconceptions, of what Values there “should be”, be transferred on the interviewee). After being explained the definition of CV/PV the interviewees themselves were given the opportunity to share their thoughts of perceived Values, and encouraged to motivate, before any specific questions were asked. This allowed them to show what types of PV that were spontaneously on their without risking the questions themselves creating connections and answers. This also reduced the risk of Values being excluded due to them not being asked about specifically. The interviewees were then asked about Activities/Components that effected the Values and was asked to score the different interactions. The full interview procedure can be found in Appendix 2 – Interview Procedure.
Table 1: Position and number of interviewees in the ‘Company S’ case.

<table>
<thead>
<tr>
<th>Division</th>
<th>Position</th>
<th>Number of interviewees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>Manager</td>
<td>2</td>
</tr>
<tr>
<td>Sales</td>
<td>Personnel</td>
<td>2</td>
</tr>
<tr>
<td>Service</td>
<td>Manager</td>
<td>2</td>
</tr>
<tr>
<td>Service</td>
<td>Personnel</td>
<td>1</td>
</tr>
</tbody>
</table>

The study at ‘Company S’ was focused on Values from the view of the Sale and Service divisions. The full PCVA-table used at ‘Company S’ can be found in Appendix 3 – PCVA-tables.

4.2. Data gathering process at ‘Company J’

The interviews were all conducted face-to-face at ‘Company J’s facilities in Japan during a two week period in April, 2015. The language used was Japanese and to overcome the fact that the interviewer was not a native Japanese speaker a voice recorder was used to help in interpreting the answers and for future reference. The allocated time for the interviews were 90 minutes per person with some flexibility if necessary.
To simplify the comparison as much as possible the interview results, the procedure was based on the procedure at ‘Company S’. Some differences were however implemented and are as follows (for detailed implementation see Appendix 2 – Interview Procedure):

As the interviews were conducted exclusively in Japanese and the interviewer were not a native speaker some constraints were needed when filling in the PCVA-table. More power was thus given to the interviewee and the interviewees themselves were asked to write the Values and Activity/Components on the PCVA-table. This gave the negative effect that the Values and/or Activities/Components could become relatively harder to interpret afterwards (i.e. very personal and narrow Values). Even so it was deemed necessary to avoid creating any additional confusion for the interviewees when they were thinking about the connection between their Values and the Activities/Components that are present in their position at the company.

Primary and Secondary Values. While spontaneity and avoiding influencing the answers were important, represented by the Primary Values, to get good material for comparison with the results from ‘Company S’ was also important. Completely differing results would, while interesting, not necessarily create a good base for a comparison as it is impossible to assume that all interviewees would recall every relevant Value during the restricted time of the interview. Therefore an additional PCVA-table was created based on the results from ‘Company S’ which was then used to gather an additional type of Values; Secondary Values. Primary Values are the Value(s) that the interviewee him-/herself mentioned without any assistance on the first, completely empty, PCVA-table. Secondary Values are Value(s) that the interviewee wanted to add after being shown the second PCVA-table containing a pre-printed selection of seven Values that were gathered from the interview at Company S’ and Matschewsky (2012)’s work; Environment, Time-to-Market, Customer Relations, Profit, Life-cycle Information, Quality and Safety. At the same time however, since it is impossible to differentiate between what Secondary Values that were forgotten but should have been primary and Values that “simply fits” after being shown, Secondary Values are only given half the “weight” of what the Primary Values are given in the scoring (covered in 4.3. – Ranking of Supra-Categories).

Apart from country specific differences (e.g. cultural, economic etc.), the business concept between ‘Company J’ and ‘Company S’ also differs significantly and was therefore an important extra part of the interviews with the sales department.

Due to some confusion with the scaling system during the interviews at ‘Company S’ (i.e. positive, neutral, negative) the PCVA-table has been altered to use (strong) positive, (weak)
positive and negative effect for the interviews at ‘Company J’, with the possibility to leave blank if not applicable or unknown to the interviewee.

The full Primary and Secondary PCVA in Japanese can be found in Appendix 2 – PCVA-tables.

As shown in Table 2 below the interviewees in the ‘Company J’ case were both higher in number and of more varying positions compared to the ‘Company S’ case. The number of interviewees from Sales remained the same however only one from the Service department was interviewed at ‘Company J’ compared to three at ‘Company S’. This is fitting considering the relatively small size of the service department at ‘Company J’. If treated the same (i.e. forced to a specific number) it would give a wrongful picture of the activities at ‘Company J’.

Figure 5: The Primary PCVA-table used at ‘Company J’.
4.3. Ranking of Supra-Categories

To simplify the comparison with the study at ‘Company S’ the same system of Supra-Categories are used (see 6.1 Interviews at ‘Company S’ for ‘Company S’ Supra-Categories). Supra-Categories are groups of Values to avoid having a large number of equivalent Values. An example of this could be the Values ‘Environment’ and ‘CO2 emission’ that would both be placed in the Supra-Category ‘Environment’. Before comparing however a control of impact was deemed necessary. For this purpose a simple tool is created to quantify the impact of the Supra-Categories and to highlight the difference in importance of these categories. The ranking is not done to necessarily reduce the number of categories, nor to rank them against each other, but to make sure that the individual category can be said to be more than just the perception of one employee (i.e. to differentiate between any individual opinion to a general perception). The ranking is done by setting a number of significance to the different variables; “Weight” (i.e. Primary and Secondary), “Side” (i.e. Provider and Customer) and “Importance” (i.e. Low, Medium, High) from the PCVA-table. These variables are set to represent the total impact the each Value, and in extension the category, have. The set values and the calculation are on the authors trial-and-error to find a good middle ground.

As mentioned in 4.2 – Data gathering process at ‘Company J’, there are two different types of Values gathered during the interviews; Primary and Secondary. To differentiate the weight between them the Secondary Values are only given half the score of the primary Values. Half was chosen to make sure that the Primary Values were highly prioritized while not reducing Secondary to having no impact at all.

Next is the “Side” as in for which party the particular Value is important. While the provider is the focus in this work, ignoring the effect on the customers would be shortsighted as the customer impact will be reflected in the big picture. Therefore the customer impact is set to be
one third of that of the provider so as to have an impact while still being heavily outweighed by the provider impact.

Last is the “Importance”, represented by a scoring of Low, Medium and High for the individual Value and “Side”. In this case the values has been set to L=5, M=10 and H=15 to make sure that the difference is significant while making sure that even a Low is contributing (i.e. to make sure there is a difference between Low and zero). For example: A Secondary value with High importance compared to Primary value with Low importance (assuming same importance for both provider and customer) would give \( 1 \times (3 \times 15 + 1 \times 15) = 60 \) vs \( 2 \times (3 \times 5 + 1 \times 5) = 40 \). Therefore, while High still has a heavier impact the Low is not ignored. It is important to note that this represents the weight/impact (i.e. perceived importance) the Value has and is not an indication of how positive or negative the Values are. A negatively impacted value is treated the same as a positively impacted value.

In conclusion the variables were set as follows:

<table>
<thead>
<tr>
<th>Weight</th>
<th>Side</th>
<th>Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY = 2</td>
<td>PROVIDER = 3</td>
<td>H = 15</td>
</tr>
<tr>
<td>SECONDARY = 1</td>
<td>CUSTOMER = 1</td>
<td>M = 10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L = 5</td>
</tr>
</tbody>
</table>

With the score based on the equation:

\[ Weight \times (Side[1] \times Importance[1] + Side[2] \times Importance[2]) \]

Example: A Primary Value with an H in importance for the provider and an M for the customer would yield \( 2 \times (3 \times 15 + 1 \times 10) = 110 \) points. The scoring creates a range between 20 and 120 points for every interviewee on any particular stated Value. In those cases where several interviewees from the same division and position choose the same Value addition is used.

Two exceptions (i.e. restrictions) were made to the scoring of the Supra-Categories.

- One interviewee can only contribute with a total of 250 points to the same supra-category. This is to avoid the risk of creating supra-categories that reflects a single particular employee position. This also helps in decreasing the bias that is created due to a small
sample size and uneven spread of occupations of the interviewees. The “Planning” category is an example of where this is the case.

- A supra-category need at least 75% of the average score, 529, resulting in a necessary minimum of a total of 400 points to qualify as a relevant (i.e. “proven”) category.
5. **Found internal and external Differences**

‘Company J’ and ‘Company S’ (both within the ‘Company J’ concern), are prime candidates for this comparison due to two major reasons: One is that they are subject to different regulations (e.g. taxes, laws etc.), due to being located in different countries, and the other is the fact that one is in Europe (i.e. Sweden) and the other is in Asia (i.e. Japan), potentially having differences in their cultural values. As shown in Figure 6 ‘Company J’ and ‘Company S’ have a mother-daughter relation, however due to their size and different markets they are close to independent. Both ‘Company J’ and ‘Company S’ manufactures several types of products, though with some differences, however only the major product will be of interest in this work (company homepages, 2015-05-20). To find explanations for differences in perceived Values in the conclusion, both internal and external, differences between ‘Company J’ and ‘Company S’, were researched.

![Figure 6: The corporative structure of ‘Company J’](image)

5.1. **External Differences**

Before going into the company specific (i.e. ‘Company J’ vs ‘Company S’) differences first is to see what external differences (i.e. differences out of the company’s control) there are. Differences that would affect any company that conducted the same type of business in both Sweden and Japan.
5.1.1. Customization possibilities

In a comparison of customization possibilities between Japanese and German automobile producers (i.e. makers and not necessarily sellers) the number of potential combinations (e.g. design, colors, wheels, parking support system etc.) was $3.7 \times 10^{24}$ for the German producers compared to “less than 5000” for the Japanese. On the other hand the Japanese producers had three times as many models. This shows that Japanese producers are inclined to have a larger number of standard models while leaving the majority of customization to the retailer, and/or end user (Staeblein, 2014).

5.1.2. Energy consumption

Reducing energy consumption has become a major point of interest in Japan both from a social and an industrial standpoint. This is due to two reason according to (Honma, 2014);

- The reliance on nuclear power was, due to the 2011 power plant incident (福島第一、Fukushima Daiichi), completely shut down and the restoration is highly unlikely due to change in public opinion.
- The other is the reliance on crude oil, and in particular oil from unstable Middle East countries, that also lacks the required security.

The response by the Japanese government has been to try and encourage renewable energy usage and stricter energy consumption policy’s.

Based on a study by Honma (2014) of the Machinery industry in Japan. Japan, while not among the worst, are behind the top in both Energy productivity (i.e. energy productivity/ton of oil used) and TFFE (i.e. “Total-factor energy efficiency” = Target Energy Input/Actual Energy Input). In comparison to Sweden the TFFE is on par however the Energy productivity is Japan has less than half that of Sweden indicating a lot of waste in comparison which is also backed by the "Potential energy savings” where, in 2005, Japan was on over 20 million tons compared to Sweden with close to 5 million tons.

5.1.3. Cost of employees

An estimation of the average cost for the company for every additional employee. Both in regards to local taxes and salaries.

**Employer tax**

Sweden has a 31.42% employer tax (i.e. expense for each employee on top of salary) consisting of pension, survivor’s pension, health insurance, parenting insurance, work-related injury
insurance, general market fee and general salary fee. This is based on people between 25 to 65 years of age, a reduced tax is applied on employees younger or older. Thus the general monthly fee for the employer is 1.3142 times the monthly salary (Skatteverket, 2015).

Japan has a more complex system dependent on the age and situation of the individual employee. The taxes are either based on the regular one month salary or “Monthly salary” which is calculated as the average of the last three months’ salaries. This is used with bonus calculations that are a percentage of the “Monthly salary” as well as some taxes, referred to below.

Social insurance is paid 50% by the company:

- Health insurance 9.97% (i.e. monthly salary × 0.0997),
- Nursing insurance 1.58% (for employees aged 40 to 64, i.e. monthly salary × 0.00158),
- Social pension 17.474% (as of September 2014, i.e. monthly salary × 0.17474),
- Child upbringing 0.15% (employees with children under 20 years of age, i.e. monthly salary × 0.00015).

This gives a total of

\[0.5 \times (\text{Monthly salary} \times (0.0997 + 0.17474) = \text{Monthly salary} \times 0.13722\]

for an employee under 40 without children and

\[0.5 \times [\text{Monthly salary} \times (0.0997 + 0.00158 + 0.17474 + 0.00015)] = \text{Monthly salary} \times 0.14587\]

for an employee over 40 years of age and with children.

Labor insurance (covered in its entirety by the employer):

- Accident insurance 0.3% (for “business with no particular danger”, i.e. salary × 0.0003),
- Unemployment insurance 0.85% (i.e. salary × 0.0085),
- Labor insurance office contribution 0.0002% (i.e. salary × 0.000002).

Contributing to an additional salary × 0.008802 salaries per month.

This giving a total monthly fee for the company of between (Monthly salary × 0.13722) or (Monthly salary × 0.014587 + salary × 0.008802) = 1.145022-1.154672 Salary/Month giving an average salary (i.e. assuming a close to 50-50 spread between the different social statuses for simplicity) of 1.15 salaries/month (Japan-payroll, 2011). This number, and in extension calculation, is also backed by World-wide Taxes (2015).

**Salary**

Sweden: It is hard to get an average pay for “manufacturing” (i.e. manufacturing is being compared due to that being the most equal parts between ‘Company J’ and ‘Company S’) in
Sweden compared to Japan (see below) as Sweden uses a much more case to case type of wage-setting thus creating very wide range of wages dependent on work and location. As a general average a monthly salary of 30 000 SEK will be used for the sake of comparison. This is a generalization of the average salary for the same group as stated below. This would be equal to about 408 255 yen (as of 2015-04-12) (StatsSkuld 2015).

Japan: Japan on the other hand has a more standardized wage system where the level of education and year of graduating (i.e. “newly graduated” or not) is more important than the actual subject studied and other merits. With comparatively low starting salaries yearly salary increase and bonuses makes up for it in the long run (gathered from the interviews at ‘Company J’ and JapanLevel 2015). Average wage within manufacturing during the last twelve months (excluding June, July and December due to bonuses) was 336 440 yen/month. Including bonuses (i.e. including June, July and December) this number was instead 417 050 yen/month (Trading Economics 2015).

**Economic conclusion**

While the numbers regarding pay are questionable at best as the definition of “manufacturing” is wide and that the calculation is based on the present rate, what can be said is that the salary is on similar levels for both countries; about 410 000 yen in Sweden and 420 000 yen in Japan. Sweden does however have a significantly higher total cost for each employee, 1.31 times the monthly salary compared to Japans 1.15 times the monthly salary, and could thus potentially have an impact on how companies in Sweden and Japan differ. In conclusion, an employee in Sweden would cost 64 000 (about 4 300 SEK as of 2015-06-07) yen more a month assuming a monthly salary of 400 000 yen.

5.2. Internal Differences

5.2.1. Business Concept

Based on the results from the interviews. The business concept of ‘Company J’, and in extension ‘Company S’ and other dealers, is dependent on from which perspective it is being observed. To try and explain the difference in business concept Figure 7 below was created. The full figure represents the view from ‘Company J’’s perspective (i.e. ‘Company J’ SCOPE) and the part within the dotted line is from ‘Company S’’s perspective (i.e. DEALER SCOPE). The dotted straight lines symbolizes the differentiation between Provider and Customer from the different perspectives (described below).
Provider and customer differentiation
As seen in Figure 7, from ‘Company J’’s point of view they are the provider and everything that follows (i.e. dealers, independent dealers, end user) are the customer (i.e. there is no differentiation for ‘Company J’ who does what with the product as long as it gets sold). This is represented in the figure by the left dotted line. From the dealer’s perspective on the other hand, everything up until the dealer (i.e. ‘Company J’ and themselves) are the provider and everything thereafter is the customer (i.e. independent dealers and end user). Represented by the dotted line to the right (within the Dealer scope). A simplification could be to say that for ‘Company J’ the dealer and the end user are the same but from the end users perspective ‘Company J’ and the dealer are the same. Thus, it is a case of objectivity which potentially could influence the importance of Values on the provider/customer differently (i.e. dependent if ‘Company S’ sees themselves as a customer to ‘Company J’ or not).

Figure 7: ‘Company J’ / ‘Company J’-dealer business concept (full map with further explanations can be found in Appendix 1).

5.2.2. Business Model

‘Company J’ is, as the interviewees themselves explained it, the “manufacturer” rather than a provider and are for most part allowing the dealers to sell/rent their products for them. ‘Company J’ produces and “sells” (i.e. mostly delivers) the product to a dealer. They themselves has, at this time, no major Rental/Lease options. The dealer (i.e. ‘Company S’ in this work) on
the other hand “buys” (i.e. receives) the product and then in turn has several channels of
distribution:

- Lease straight to the end user
- Rent straight to end user
- Sell directly to the end user
- Sell to an independent dealer
- Sell to an independent rental company

In turn the independent dealer then sells to the end user and the independent rental company
either rents to the end user or rents back to the dealer who then rents to the end user. The
opposite is also possible. This is one way for the dealer to better face unexpected high/low
demand. It also creates a closer relationship with the independent rental companies.

A note to this is that it is important to differentiate between ‘Company J’ and Japan based
‘Company J’ dealers. See 5.2.3. Product flow and Figure 8 below for clarification.

5.2.3. Product Flow
The product flow is, based on the interviews conducted by the author and illustrated by Figure
8 made by the author below, the following:

- ‘Company J’ in Japan (i.e. the mother company) is producing ‘J-vehicles’ that they sell
to their own dealers in Japan as distributors to dealers abroad (i.e. ‘Company S’ among
others). Illustrated by the color orange in Figure 8 below.
- ‘Company S’ in Europe is producing ‘S-vehicles’ that they sell in Europe as well as
distribute to ‘Company J’ for sale in Japan and to ‘Company A’ for sale in America.
Illustrated by the color blue in Figure 8 below.
- ‘Company A’ in America produces ‘A-vehicles’ for sale in America as well as for
distribution to ‘Company S’ who in turn sells them in Europe or distributes them further
to ‘Company J’ for sale in Japan. Illustrated by the green color in Figure 8.

Thus the direct dealers delivers to ‘Company J’ for further distribution outside of their own
market with the exception of ‘Company A’ that is owned by ‘Company S’. Illustrated by the
color black in Figure 8. Also, while ‘Company S’ is below ‘Company J’ and ‘Company A’ is
even further down below ‘Company S’ from a manufacturing point of view they are all the
same, making their own type of vehicles (i.e. same type of vehicle but for different uses).
Figure 8: Internal product flow (authors own simplified model, color explanation in text above)
6. **Results**

6.1. **Interviews at ‘Company S’**

At the previous study at ‘Company S’ a total of 28 different PV and CV were mentioned that were then compressed into seven so called “supra-categories”. It is however mentioned that, since some Values could be placed in several categories, this is only a simplification and not to be “over-interpreted or seen as absolute or correct”. The final Supra-Categories from that study were as follows (in no particular order):

- **Economic / Monetary Value** including all economic exchanges.
- **Safe Operation** including ‘Ergonomics’ and ‘Safety’.
- **Long-Term Thinking** includes ‘Long-Term Thinking’, ‘Security & Continuity’ and ‘Environment’.
- **Quality** including ‘Quality’ and ‘Well-Designed Product’.
- **Customer Relations / Service Excellence** including ‘Effective Service’, “Simplified Communication”, ‘Higher Availability’ etc.
- **Information / Knowledge** includes ‘Technician’s Knowledge’, ‘Experience’ and ‘Increased Competence’.
- **Brand and Size** includes ‘Capacity’, ‘Personnel Backup’ and ‘Partnership’.

6.2. **Interviews at ‘Company J’**

As the interviewees at ‘Company J’ are almost exclusively Sales-oriented, in the PCVA-tables Sales is what will be used for the comparison. Rental is what the interviewee thinks would benefit the rental/lease procedure and is thus, while valuable for getting an insight in the thought-process, not directly relevant to this work.

A total of 32 Values were mentioned by the nine interviewees (during eight interviews). These were, for the purpose of simplifying a comparison with the ‘Company S’ result, comprised into ‘Company J’ specific supra-categories. A significant number of Values could be said to belong in several, and/or other, categories however the reason for the designation has been done based on the related comments from the interviewees during the interviews. The Values has been designated to the most fitting category and not necessarily the only fitting category. In the same way as the ‘Company S’ study, this is to give a general view of what the most important Values and care has been taken to ensure that the placing is as fair as possible.
‘Company J’ Supra-Categories

From the scored results, described in 4.3 – *Ranking of Supra-Categories*, a total of six categories were identified (in alphabetic order): Customer Relations, Economics, Information, Safety, Time-to-market (productivity) and Quality.

Supra-Categories below in strictly alphabetical order and not in any way indicative of any individual order of importance.

**Customer Relations** consists of Customer relations, Customer satisfaction and Service. This was overall referred to as increasing recurrence and spread; a happy, satisfied, customer is more likely to not only return but also buy more products as well as utilize additional services, tying themselves harder to the provider. In particular good cases they might also recommend the product/service/company to others.

**Economics** consists of several different views on what is the most important part for economic viability:

- Proceeds – Sale price from the providers perspective
- Cost – How much every sold item costs for the provider
- Profit – The remaining funds when retracting costs from proceeds
- Price – How the sale price influences the customers
- Product features – What the products is offering to the customer, interconnects with price point etc.

From the providers point of view it could be thought of as the combinations that enables the provider to get desired economical gain (i.e. higher price gives higher gain but lower sales, lower cost gives higher gain but might have other negative effects etc.).

**Information** is both Information in general as well as Life-Cycle Information. In the same way as Safety, a very general way to describe the fact that the more information the easier it gets with decision-making, the better the product or service can be customized to please the customer or simplify for the provider etc. This is excluding the cases where too much information could complicate decisions. As in this case ‘Company J’ can both choose what information to collect and in what extent as well as what to use (i.e. all additional information is not necessary to utilize to 100%) this is not relevant in this case. In particularly interesting were:

- How often unforeseen maintenance (e.g. due to malfunction) is required and how much time the type of problem requires to solve.
• How often expected, but semi-randomly occurring, maintenance is required. Parts that needs to be replaced (e.g. drill bits for machines, oil for the vehicles etc.) and how complex (i.e. time- and manpower consuming) the process is.
• How often regular service (e.g. monthly/yearly check-up) is required and the necessary time for this?

Safety is used very general to describe the safety of the end user as well as the production and service process. This is with the simple motivation that “obviously” any danger should be minimized if possible.

Time-to-market (productivity) is Time to Market, Time for delivery, Efficiency, Productivity, “Operativity” (i.e. the general flow of the process), Inventory and Time. The faster and more effectively a product can be developed and produced the more “weight” it holds on the market. Any new technology is only new for a limited amount of time, as part of the free market it can be assumed that the competition will be observing and do their best to copy or develop their own equivalent as soon as possible, effectively changing it from new or special to standard. This is not to say that the technology will become useless but the window of opportunity for maximal revenue is not going to wait if the production is too slow. Another aspect is that the shorter time that is needed to deliver an additional unit both makes the company more flexible to unexpected changes as well as decrease the need for any major storage. Finally, the less time needed the less inventory cost is applied.

Quality consists of the Values Quality and Standardization (e.g. interchangeable parts, strict methods etc.). Used by the interviewees to express anything that might interrupt the “flow” and thus create a subpar product. This is highly contributed to the use of the constantly moving production system (i.e. constantly moving line for production) where even a small problem or defect will make the entire production-line stop, ensuring a low amount of defected products but at the same time being very dependent on that the number or problems is kept to an absolute minimum from the start.

Non-proven categories
Additionally there were categories that, after being scored, resulted in comparatively low scores and is therefore not relevant to the results. It is important to differentiate these from worse than the Categories that were highly scored. All that can be said is that, due to the limited number of interviewees this work is based on, it is possible to show relevance but not to prove non-relevance.
**Planning** – While being close to making it in to the prioritized categories this category is also the most unreliable. Almost the entire score is contributed by a single interviewee with very narrow Values that were very task specific. Thus even with enough points Planning would be difficult to use as a category. This is however not to say that Planning is unimportant but rather something that is seen as obvious in the process, mentioned by several interviewees as simply a part of their job but not part of any Value as it cannot be “better than expected”.

**Company environment** – Representing Employee satisfaction, Growth potential and Company environment, it is a very Primary category with an interesting and different thought process, however it did not get enough points to be considered relevant as a category.

**Product functionality** – Consisting of Functionality, Customization and Ergonomics; this is another category that has the same dilemma as Planning, important but not a Value. The customer gets the product that they buy and should get nothing more and nothing less. On the contrary if the provider were to change something on the product, after sale but before delivery, that would instead be a breach of contract and weather it is good or bad for the customer is irrelevant (i.e. unless specifically specified in the contract).

**Environment** – While a very wide meaning the least prioritized Value at ‘Company J’. Unrelated to most tasks of the interviewees.

### 6.3. Discussion

#### 6.3.1. Comparing results

Based on the comparison of the relevant categories in Table 3 below, the majority of categories were similar; ‘Information’, ‘Customer Relations’, ‘Economical aspects’, ‘Safety’ and ‘Quality’ are all highly perceived in both cases. ‘Time-to-Market’ however was not a category at ‘Company S’ and ‘Long-term thinking’ and ‘Brand and Size’ were on the other hand not a category at ‘Company J’.
Table 3: Supra-category comparison (in alphabetic order not indicative of importance)

<table>
<thead>
<tr>
<th>‘Company S’</th>
<th>‘Company J’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand and Size</td>
<td>Customer Relations</td>
</tr>
<tr>
<td>Customer Relations / Service Excellence</td>
<td>Economics</td>
</tr>
<tr>
<td>Economic / Monetary Value</td>
<td>Information</td>
</tr>
<tr>
<td>Information / Knowledge</td>
<td>Quality</td>
</tr>
<tr>
<td>Long-Term Thinking</td>
<td>Safe Operation</td>
</tr>
<tr>
<td>Quality</td>
<td>Safety</td>
</tr>
<tr>
<td>Safe Operation</td>
<td>Time-to-Market</td>
</tr>
</tbody>
</table>

Table 3 above is to show the found differences between Perceived Values at ‘Company S’ and ‘Company J’. There is no particular order or differentiation between the Values.

6.3.2. Similar Values

That Quality and Safety is the same is in accordance with the company’s general guidelines and is apparent when visiting both sites; posters, audio messages etc. are used constantly to remind the employees of their importance. The “Kaizen” (improvement) in particular is something that resonates strongly with both and are also actual steps at both ‘Company S’ and ‘Company J’. Representing that things that can be improved should be and Quality and Safety are good examples of where this is possible with the “more is better” line of thought.

Economics is also a straightforward Value for both, not only due to both being profit-driven companies but also with the general motivation that there would be no reason to continue unless it at least can pay for itself.

Information is is relevant to both ‘Company J’ and ‘Company S’ as they are producing expensive large machinery that takes time to produce and thus it is essential to be able to plan ahead. To have information to back up decisions to produce what, where, in what amount and when is very valuable for any provider but in particular with larger, more expensive products.

Customer Relations is equally relevant to both ‘Company J’ and ‘Company S’. The happier and more satisfied the dealer, independent dealer or end user can become the higher the likelihood of continued, and potentially increased, business.
6.3.3. Differing Values

Differing between the two companies are three Values: **Time-to-Market** is not voiced as a ‘Company S’ Value, **Long-Term-Thinking** is not voiced as a ‘Company J’ Value and **Brand and Size** is not voiced as a ‘Company J’ Value. Based solely on the individual opinions of the interviewees and the interpretation of the author.

**Due to Business Concept (Manufacturer vs Dealer)**

\[ H_0: \text{The difference in business concepts (i.e. “manufacturer” vs dealer) is an unlikely reason for the difference in perceived Values.} \]

While ‘Company S’ is a dealer within the business concept, ‘Company J’ and ‘Company S’ are both producers of their own similar, however not identical, product. From a manufacturing standpoint there is no found difference between having a customer defined as a dealer or end user. Thus as both ‘Company S’ and ‘Company J’ are equal in that aspect the impact of **Time-to-Market (TtM)** is the same. *H0 can therefore not be discarded for TtM*. It is not possible to state that the business concept would be a likely reason for the difference in TtM.

**Long-Term Thinking (LTT)** was mentioned by several interviewees at ‘Company J’ from a manufacturer standpoint however it is not referred to as a Value. Therefore, it is clear that a difference in perceived Value regarding LTT exists, however nothing has been found to indicate that the business concept itself was the reason. *H0 can thus not be discarded for LTT*. It is not possible to state that the difference in LTT is due to the business concept.

**Brand and Size (BnS)** is described as Capacity, Personnel Backup, Partnership etc. in the study at ‘Company S’. While no reason for its absence at ‘Company J’ can be found there is also nothing that would indicate that it should be connected to the business concept. *H0 can therefore not be discarded for BnS*. It is not possible to say that the business concept is the reason for the difference in BnS.

**Due to Business Model**

\[ H_1: \text{It is unlikely that the difference in Values are due to the different business models (i.e. Rental in the case of ‘Company S’ and Sales for ‘Company J’).} \]

In the same way as for H0, **Time-to-Market (TtM)** is almost exclusively relevant to the manufacturing procedure and not directly to the business model. *H1 can therefore not be*
It is not possible to say that the business model (i.e. sale vs rent) would be a likely reason for the difference in TtM.

While planning is an essential part for selling it has an even higher impact on rental. This is due to the complexity of having enough products for new customers while at the same time having as few as possible since earlier customers will be returning with their rented products. The concept is not very far off from remanufacturing and the additional work of reverse logistics. For a deeper look on this see Guide (2000) or Fleischmann et al. (2000) who both gives a good insight of the amount of additional work and planning that is needed. Therefore Rental can be seen as more relevant to Long-Term Thinking (LTT) and in extension more relevant to ‘Company S’ than ‘Company J’. 

Brand and Size (BnS) has nothing found that would indicate a difference due to the business model. H1 can therefore not be discarded for BnS. It is not possible to say that the business model is the reason for the difference in BnS.

Due to employee cost

\[ H2: \text{The difference in cost, and in addition number, of employees is unlikely to be a reason for the difference in perceived Values.} \]

While relevant to the manufacturing process, nothing has been found that explains a difference in Time-to-Market (TtM) between ‘Company J’ and ‘Company S’. H2 can thus not be discarded for TtM. It is not possible to say that the cost of employees would be a reason to the difference in TtM.

Long-Term Thinking (LTT) and Brand and Size (BnS), however, are relevant to the difference in work-areas and in extension number of employees. As shown in 5.1.3. – Cost of employees, the average employee is less of a cost for ‘Company J’ than ‘Company S’ enabling ‘Company J’ to have a comparatively higher number of people on the same job for the same cost. This is backed up by the interviews where the general approach is to focus on “their” area (i.e. part of a task). The parts are then tied together with weekly, or even daily, meetings where everyone reports their progress. This is then tied together with increasingly bigger groups (i.e. a group manager report to the team managers who in turn report to the project managers etc.). In extension, this also might result in that the average employee has less knowledge of, and to
some extent interest in, the bigger picture. Important to note it that this effect is based on the opinion of a limited number of employees and as such some amount of skepticism are recommended. It is also possible that some would consider it the opposite; more meetings makes more people involved, however this can be only speculated as the collected data suggest the previous. ‘Company S’ on the other hand, with more expensive employees needs more flexibility with the tasks and thus a wider range of knowledge, both regarding Long-Term and the company in general, is necessary. This results in that, while LTT exists at both companies, it is deemed not as relevant to the average employee at ‘Company J’, and consequently not perceived as a Value to most outside of the planning department. Regarding BnS the more expensive the employee the more impact it can have on the perception of the company, this is however very speculative and needs more research to prove. $H2$ can be discarded for LTT and BnS. It is possible that the difference in LTT and BnS can, to some degree, originate from the difference in employee cost.

**Remaining differences**

Customization are related to both Time-To-Market and Long-Term Thinking and, as shown previously in 5.1.1. Customization possibility, Japanese companies are more likely to leave more of their customizations to their dealers compared to European companies. In this study (i.e. at these two companies) however, this has been found not to be the case. The products are, while of the same type, different as shown in 5.2.3. Product Flow, and the majority of customization is done at its manufacturer (i.e. vehicle J at ‘Company J’ and vehicle S at ‘Company S’) before shipping.

Energy consumption could not be linked to any of the Values and was not mentioned at all during the interviews.
7. Conclusion and Future Work

7.1. Overall results

The results were similar between the interviews with only three Values that differed. Two of these could then be attributed to the differences in the cost of employees and the business model. Long-Term-Thinking due to the difference in business model and cost of employees. Brand and Size due to cost of employees, however while relevant it is hard to say if this is due to the actual cost of employees or if it is a deeper cultural reason that motivates Japanese companies to have a higher number of employees. It is thus potentially only part of the reason. The only difference in Values that could not be accounted for was Time-to-Market, however this is potentially the result of the dispersion of the interviewees and the small sample size. While it is easy to speculate of reasons for this, no proof has been found and the non-existence of TtM at ‘Company S’ remains unexplained.

Important is to stress the limitations of this study; a limited amount of data based on the opinions of a relatively small number of people. While this is not to be disregarded it is also not to be taken as a representation of ‘Company J’ until further interviews are conducted in this type of setup to confirm the findings. Consequently these results are only an indication of what potentially is the case.

In regards to the environmental aspect, with only a mention from three people out of nine and only as Secondary Values, it is clear that environment is not something they believe they personally can have a noticeable difference on. Comments like “How to count (the environmental impact)” and “It is hard to justify the time to potentially find something that influences somewhat” shows that the quantification of the environmental effect is the main problem as it cannot be estimated how much resources it is worth. Indicating that the major hindrance is the difficulty in quantifying the cost and profit. Once again however, these are individual opinions and not based on any general company policy.

7.2. Potential improvements

Number of interviewees: the low number of interviewees is a limiting factor and while it has been accounted for in this work with the help of scoring and limitations a higher number would have meant both that the important Values would have been easier to distinguish, as well as that more Values might also have emerged. This also goes for the original interview at ‘Company S’, due to the limited number of interviewees the result were also limited.
Interviewee positions: Due to the different focus of the first study at ‘Company S’ the only interviewees were from Sales and Service. This created a weakness in the comparison as it is not possible to guarantee that the Values would not be different if a wider range of interviewees were present during the interviews at ‘Company S’.

7.3. Society & Ethics

As the majority of this work was based on individual opinions on company based level with a relatively safe product (i.e. not weapons or nuclear related etc.) the most relevant to the product would be the environmental aspect. However even from this perspective it is still a very minor point due to similar, but non-related, products that exists and has a much higher impact (e.g. cars, trucks, aircrafts etc.). The biggest potential ethical dilemma might be the use of foreign workers in sub-factories however nothing to portray this in a bad light has been found and for everything that is known to the author they might as well be living and working under extremely good conditions.

7.4. Future research

PVs in general and in particular the measuring and utilization of them could provide a great help for companies planning to expand abroad. Even though this work states that a “correct” amount does not exist, in the same way that economic-focused tools can create a close estimation, so should PV related tools be able to given enough research.

In regards to this work the future research has several questions to answer: Could similar conclusions be drawn if the comparison were between Japan and America or Sweden and America? Would the mentioned Values change if another set of companies in the same situation (i.e. Sweden-Japan) were used? Would the importance of the Values change based on the type of product or brand (i.e. using another company where the only main difference from this case were the brand name)?
Bibliography


Takizawa O., Urushihara H., Tanaka S., Kawakami K., Price difference as a predictor of the selection between bland and generic statins in Japan. Health Policy (2015), http://dx.doi.org/10.1016/j.healthpol.2015.01.010.


Websites


Appendix 1 – Business Concept

Company J Scope

Dealer Scope

Company J Owned

Contractor

Company J “Manufacturer”

Provider

Customer

End User

Exceptions

Sales

Rental

Lease

Rental

Independent Rental Co.

Independent retailers

Sales

Rental

Targeted sales, region locked.

Also used for both practical (e.g. parts and service) and economical (e.g. price) testing.

Retailers that are contract locked

Internal “sales” and highly customized orders (e.g. due to number of items, unusual purpose, time for rental etc.)
Appendix 2 – Interview Procedures

‘Company S’ - Interview procedure:

Step 1 – Introduction: Introducing the interviewee (referred to as the participant) to the data collection procedure and interview process; explaining in detail how the PCVA-table works.

Step 2 – General Values: The participants were then asked what they, from the perspective of their occupation at ‘Company S’, perceive as “Value Adding Services” that they come in contact with. By taking notes of the response the participant then decided which values that seemed the most important and ranked them according to importance. These were then noted, from left to right in that order, into the Values spots in the PCVA-table (1), see Figure 9.

Step 3 – Value ranking: Next the participants were asked to specify the perceived importance of each Value from the customer and providers point of view, in regards to both selling and renting, with a low (L), medium (M), or high (H) value at (2).

Step 4 – Activities/Components: Based on the previously found Values the participants were then asked to list which activities/components that they perceived as the underlying causes for every Value separately (3).

Step 5 – Activity/Component ranking: For each Value the participants were then asked to specify if each Activity/Component had a positive (p), neutral (0) or negative (n) effect on the consumer and provider at (4) in the PCVA-table (or left blank when uncertain). Differentiating the cases where the business model was selling and renting.

Step 6 – General ranking: Regardless of their related Value(s), the participant then scored the Activity/Component under OVERALL ASSESSMENT (5). The scale ranged positive (p), neutral (0) or negative (n) (once again with the option to leave blank) and from both the customer and providers point of view in the case of both sale and rental.

Step 7 – Most influential Value: The most important Value for each of the Activities/Components, from a customer and provider separated), were asked and noted under the “Essentials” category (6).

This concluded the interview at Company S.
‘Company J’ - Interview procedure:

**Step 1 – Introduction:** An introduction of the data collection procedure and interview process was first conducted. Explaining the concept of “Value”, including deeper explanation of Provider and/or Consumer value, when desired or deemed necessary. Additionally, a walkthrough of the PCVA-table whilst explaining the grading system on the individual scales was also done.

**Step 2 – Finding Values:** The participants were asked what Values they could think of that are present in their position at the company. They were then asked to note the answers, starting with what they believed to be the most important and influential Value, on the PCVA-table (1) while explaining their reasoning (i.e. how the individual Value relates to their position at the company). Values were added until the table was full (i.e. seven Values) or they were satisfied that they could not specify any additional Values. In the case of additional Values, on top of the seven, an additional PCVA-table was supplied.

**Step 3 – Finding Activities/Components:** Next was to, for each of the previously specified Values separately, specify with what Activities/Components that the particular Value is being created (i.e. enhanced). The answers were then added to the PCVA-table (2) in the order stated.
Step 4 – Rating Values and Activities/Components: As an extension to Step 2 the participants were then asked to specify the importance of each Value at PCVA-table (3) with a (L)ow, (M)edium or (H)igh from a provider and customer standpoint. In addition the same was done to Step 3 with rating of the activity/component at PCVA-table (4) from both a provider and customer point with separately sales or rental in mind. This was done with a (strong) positive, (weak) positive or a negative.

Step 5 – Relation between Values and Activities/Components: As the main bulk of the interview, PCVA-table (5); the participants were asked to specify, for every individual Value to Activities/Components combination, with a (strong) positive, a (weak) positive or a negative on how respective Activity/Component relates to respective Value. Covering all combinations even if they were not intended as related at first.

Step 6 – Most important Values for the individual Activities/Components: From the stated Values the participants picked which Values that are, in their mind, the most important for the customer and provider respectively for each of the Activities/Components and noting this at PCVA-table (6).

The result up until this point is called Primary Values and is representative of the Values with the highest importance. A new PCVA-table was supplied, referred to as PCVA-table SECONDARY, with seven Values that were highly relevant during the Company S interviews already printed; Environment, Time-to-Market, Customer relations, Proceeds, Life-cycle information, Quality and Safety.

Step 7 – Repetition: The steps three to six were then repeated with the new PCVA-table (i.e. PVCA-table SECONDARY). This results from this additional table showed what in this work is hereby referred to as Secondary Values.

Additionally for the employees in the Sales and Service divisions:

Step 10 – Business model/concept: The participants from Sales and Service were asked to explain, in their words, the Company J business model and business concept and what they perceived as positive and negative aspects of using this model. A figure was provided for their use if desired where they could freely draw the relation.
Step 11 – Business Model and Business Concept effects on Values: The participants were asked if there are any Values and/or activities/components in particular that is affected by the business model or the business concept and in what way they were affected.

This concluded the interview at Company J.

Figure 10: Translated and redesigned PCVA-table for the interviews at Company J. (With position indicators from the procedure above)
# Appendix 3—PCVA-table—‘Company S’

<table>
<thead>
<tr>
<th>Provider’s Activity / Physical Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Overall Assessment</th>
<th>Essential Values for Customer and/or Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Importance of Value for Customer / Provider</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
</tbody>
</table>
## Appendix 3 – PCVA-table – ‘Company J’ - PRIMARY

<table>
<thead>
<tr>
<th>活動/コンポーネント</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>カスタマーエクスペリエンス</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>プロバイダーエクスペリエンス</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>カスタマーエクステリシオン</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>プロバイダーエクステリシオン</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>価値</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>カスタマーエクスペリエンス</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>プロバイダーエクスペリエンス</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>カスタマーエクステリシオン</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>プロバイダーエクステリシオン</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>価値の重要性</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>カスタマーエクスペリエンス</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>プロバイダーエクスペリエンス</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>カスタマーエクステリシオン</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>プロバイダーエクステリシオン</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Appendix 3—PCVA-table – ‘Company J’ - SECONDARY

<table>
<thead>
<tr>
<th>環境</th>
<th>タイムツーマーケット</th>
<th>顧客</th>
<th>役割</th>
<th>収益</th>
<th>ライフサイクル情報収集</th>
<th>品質</th>
<th>安全</th>
<th>活動/コンポーネント</th>
<th>最も重要な価値</th>
</tr>
</thead>
<tbody>
<tr>
<td>カスタマー</td>
<td>プロバイダー</td>
<td>カスタマー</td>
<td>プロバイダー</td>
<td>カスタマー</td>
<td>プロバイダー</td>
<td>カスタマー</td>
<td>プロバイダー</td>
<td>カスタマー</td>
<td>プロバイダー</td>
</tr>
<tr>
<td>レシート</td>
<td>レシート</td>
<td>レシート</td>
<td>レシート</td>
<td>レシート</td>
<td>レシート</td>
<td>レシート</td>
<td>レシート</td>
<td>レシート</td>
<td>レシート</td>
</tr>
<tr>
<td>活動/コンポーネント</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>活動/コンポーネント</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>活動/コンポーネント</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>活動/コンポーネント</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>活動/コンポーネント</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>活動/コンポーネント</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>活動/コンポーネント</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>活動/コンポーネント</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>活動/コンポーネント</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>活動/コンポーネント</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>活動/コンポーネント</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 傾斜の重要性 | | | | | | | | | | | | | | | | | |