

Bachelor thesis
Mooring services price strategies



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1. Introduction

When people think of the port they think of big cargo carrying vessels, oil terminals, crane terminals, storage terminals, and refineries. But there are many more activities in the port than only these obvious ones. Think of pilotage services, mooring services and towage services. These services are needed if you want to achieve activity in the port. Vessels need to be guided in to the port with the help of a pilot. The pilot needs help from towage boats to help steer these big vessels in a safe way to the quay wall. Finally the mooring men attach the vessels to the quaysides, buoys and jetties. In this thesis only the last part “the mooring services” will be closer investigated comparing different pricing systems.

When it comes to mooring there are several different pricing systems used in different ports all over the world, for example pricing based on volume, length and weight. As can be seen mooring services are priced mostly based on a measurable aspect of a vessel (Lloyd, 2007). Clearly, there is not one system that stands out as can be seen due to a lot of different systems used. Mostly it is not clear why a certain system is used, and why for example bigger or heavier vessels pay more mooring cost than smaller lighter vessels. For companies with profits based on the mooring and unmooring of vessels it is of utmost importance to come up with a good and clear pricing structure for their customers and for themselves as a company (Lloyd, 2007).

In the port of Rotterdam the mooring services are provided by the “Koninklijke Roeiers Vereniging Eendracht” (KRVE). The KRVE uses the mooring pricing system based on the length of a vessel. The KRVE has been using this system from the start (bimco, 2014). This means that a vessel of for example 250 meters pays more mooring costs than a vessel of 255 meters. This system is used due to the difficulties that come across with a bigger vessel when it comes to mooring. A bigger vessel needs more lines and is more sensitive to waves and strong winds (Lloyd, 2007). Vessels are becoming bigger and bigger and for big vessels the mooring costs are only a small percentage of the total port cost. On the other hand for small inland going vessel this is a big proportion of the total cost (Lloyd, 2007). Since the KRVE

uses this pricing system from the beginning, one might wonder if the current pricing system is still sufficient in its goal for the KRVE. That is why the different alternative pricing systems will be investigated. The research question that will be used in this paper is: **Is the current pricing system in the mooring service business of the KRVE still sufficient, or could there be a better pricing system?**

The answer to this question will be found using sub questions, which will lead the reader to a final answer. It will be done using two separate routes. On the one hand taking a look at the possible pricing systems used in the mooring business at other ports and pricing systems in general used by all sorts of companies. On the other hand looking at the current pricing system of the KRVE and what the movements of that system were in the last couple of years. Also the goal of the current system will be explored. In the final section these two "roads come together to find the optimal pricing system for the KRVE.

The sub-questions that will be used are:

- 1) What are the different price objectives?
- 2) What are different pricing systems and strategies?
- 3) What are the different pricing system used in other ports?
- 4) What are the different tasks of the KRVE where the price is based on?
- 5) What is the current pricing system of the KRVE?
- 6) What would be the best pricing system for the KRVE?

2. Pricing strategies

In this chapter different pricing determinants will be discussed. There are three main determinants that have to be dealt with for setting a good price for a product/service, namely price objective, pricing methods and differentiated pricing. The price is not only important for the profit of a company, it also is important for possibly keeping competitors out. A low price can tell people that your product/service is rubbish; on the other hand a price, which is too high, may cause people not to buy your product/service. A good price strategy is key for a company's success.

2.1 Price objectives

When getting in a new market or rethinking the market strategy of your company, it is important to have an objective. For a good price objective it is important to know what the company wants than it can possibly profit from a good price instead of just following the markets price or simply covering costs without any reasoning. According to Kotler and Keller there are six possible objectives when positioning a product. These objectives are survival, maximum current profit, maximum market share, maximum market skimming, product quality leadership and other objectives.

Survival is just surviving as a business. Companies do this when they have too much capacity, large inventories, strong competitions or changing consumer wants. Survival is a short run objective and is met when only the fixed and variable costs are covered (Kotler & Keller, 2009).

Maximum current profit is an objective to maximize the profit. Companies have to calculate the costs and the estimated demand and set a price accordingly so the profit, current cash flow or return on investment (ROI) will be maximized. Companies need to have a good insight in the possible demand; this is in practice very difficult. The down side of this objective is the possibility of neglecting the long-term profit and setting the companies durability at stake (Kotler & Keller, 2009).

Maximum market share is an objective to maximize the market share in the market they operate. This idea is based on the thought that a higher sales volume will lower unit and a higher long run profit. This is also called a market penetration strategy to get into the market and get an as large as possible share in the market. If costs are falling the price can also be reduced and more products can be sold. There

are three reasons to adopt this objective. One, the market is very price sensitive and a low price stimulates growth. Two, when quantity is increasing costs are decreasing. And three, a low price will discourage future competitors to enter the market (Williams, 2008).

Maximum market skimming is an objective when revealing a new technology. Prices are set high and drop slowly to really take advantage of the lead you have on the competitors. The risk with this method is lurking of competitors. They can set the price low and “steal” all of your profit. This objective only makes sense in the following conditions. One there is a sufficient current demand, two the unit costs for a small badge is not very high, three the high initial price does not attract more competitors and four the high price reflects quality in the minds (Williams, 2008).

The aim of product quality leadership is to offer the highest quality product to the consumers in the market. These companies want to set a price that is not out of reach for a lot of consumers but high enough to show their exclusivity, for example products like Starbucks coffee, grey goose Vodka and BMW (Kotler & Keller, 2009).

There can also be other objectives. For example non-profit organizations mostly want to help people and not want to make a lot of profit but just want to exist. The main aim of these companies is to cover the cost (Kotler & Keller, 2009).

2.2 Pricing methods

Pricing methods are ways for a company to price a product or service. This is one of the most important tasks of the company. With the chosen method it can distinguish itself from its competitors. According to Avlonitis and Indounas there are twelve pricing methods falling in three large pricing categories namely cost based methods, competition-based methods and demand-based methods (Avlonitis & Indounas, 2005). These twelve pricing methods will be discussed in this chapter.

2.2.1 Cost-based method

This category is divided in five sub categories namely cost-plus method (mark-up pricing), target return pricing, break-even analysis, contribution analysis and marginal pricing. In this category the price is based on the costs made for making and delivering the product (Avlonitis & Indounas, 2005).

Cost-plus pricing is a method to calculate the final price. With this pricing method you add a mark-up to the products costs. This means that the company takes the costs system from the previous sector determines his target return for example 20% and adds 20% on his costs. The formula is shown below as formula 1. The mark-up on products differs on basis of the specialty, sales velocity and inelastic products. It does not consider demand, perceived value and competition of the product. This is a clear disadvantage of Mark-up Pricing. The advantage is the simplicity of the method because discovering the costs is not as hard as precisely knowing what the competition is up too (Kotler & Keller, 2009).

$$\text{cost - plus price} = \frac{\text{unit cost}}{1 - \text{desired return on sales}}$$

Formula 1 (Hilton, Maher, & Selto, 2008)

Target return pricing determines the ROI. This is the ROI a specific part of the company wants to have, based on the investments they made in this section of the company. The formula below will give a clear view of how this works. This formula is based on predicted unit sales and is shown below as formula 2. It is important to know what the company's profit (loss) is when it does not reach the predicted sales. Therefore it can make a Break-even diagram that will calculate the amount of sales where the company does not make a loss or a profit. Also this formula is shown

below as formula 3. This method also discards price elasticity and competitor prices. A company has to make more predictions with different prices to have a clear view what can happen (Kotler & Keller, 2009).

$$\text{target return price} = \text{unit costs} \times \frac{\text{desired return} \times \text{investment capital}}{\text{unit sales}}$$

Formula 2 (Hilton, Maher, & Selto, 2008)

$$\text{Break even volume} = \frac{\text{fixed costs}}{(\text{price} - \text{variable cost})}$$

Formula 3 (Hilton, Maher, & Selto, 2008)

Break-even analysis is the method where the price is determined according to the point where the total revenues equal the total costs. This can be seen in formula 3. This is the amount a company has to sell to break even (Hilton, Maher, & Selto, 2008).

Contribution-margin analysis is similar to the break-even analysis but the difference is that the costs are taken into account. Contribution margin only takes the direct costs of a product or service into account. Obviously the break-even point of this method lies much lower than the one of the break-even analysis (Avlonitis & Indounas, 2005).

The last method of this category is marginal pricing where the price is equal to the costs of producing one extra unit of output this is called marginal costing. These costs lie below the total and variable costs. These methods are used to cover the costs of the company. Cost-based pricing is one of the more easy methods, which can be used to price a product. The downside of these methods is not considering how customers demand affects the prices of the product. Basic economics taught us that if the demand of a product decreases the price of that product also decreases. The second downside is not including the competitions pricing method in the method. This could encourage competitors to enter the market and offer a lower price than the current company does (Methods to price your product, 2009).

Cost strategies

When a company wants a good and fair pricing strategy to make profit and to prevent customers from running away to the competitor, it needs to establish a good costing system to figure out the actual costs the company incurs (Wasserman, 2010). This is easier said than done, because there are many costing strategies and also a lot of pricing strategies. In this chapter different costing systems will be discussed. These costing systems will be explained how they work and what they are used for. This is an important step to figure out the best possible strategy for The KRVE in determining a new price for the mooring service they provide.

It is important to begin with the costing systems to determine the costs incurred by making a product or providing a service. The systems that will be discussed are product costing, traditional costing and activity based costing system respectively.

Firstly, the product costing system is divided into two different approaches, first absorption (full) costing and second variable (direct) costing. Absorption costing is a method where the direct materials, direct labor and both fixed and variable overhead are seen as costs, which are charged for a specific product. Variable costing only charges direct materials direct labor and variable overhead for a product and assigns the fixed manufacturing overhead when it becomes an expense which means that fixed manufacturing overhead is a periodically expense. Variable costing and absorption costing consider fixed manufacturing overhead as product costs which can stay in inventory for example. The difference in these two methods lies in the timing of the fixed manufacturing overhead costs (Hilton, Maher, & Selto, 2008).

Secondly, the traditional costing system is a simplistic and easy to use costing system. This is a costing system, which only accounts direct costs to a product, which include direct labor costs and direct manufacturing costs respectively. This system could work if there are relatively little indirect costs occurred when making a product or providing a service. A couple of these systems are process costing, job order costing and operating costing. Process costing is a costing system, which looks at a number of units made in a period of time, and assigns costs accordingly, not considering unit costs for example companies like coca cola. Job order costing does consider each individual unit as a product to assign cost too. This is more precise but also more costly because you have to monitor it very closely, think of a company that installs printers in offices. And finally, operating costing which is a combination of

process costing and job order costing. It is used when there are a lot of similar units made with different kind of products think of companies which make automobiles (Hilton, Maher, & Selto, 2008).

Thirdly, the activity based costing method (ABC) will be discussed. This system is an improvement on the traditional costing system but is more complicated compared to the traditional ones. This system first assigns costs to activities and then assigns costs to goods and services used to make a product or deliver a service. This way the person who makes decisions for the company can easily see all costs incurred by making a product or providing a service. With ABC there are a couple steps involved in the process namely identifying the activities related to the company's products, estimating the cost of those activities, calculating a cost-driver rate for all of these activities and finally assigning activity costs to the products. A company has to do this on several different levels namely unit, batch, product, customer and facility level. This way it is easier to assign costs to products and where the costs occur in the process. Nowadays this costing system becomes more popular to use within companies (Hilton, Maher, & Selto, 2008).

A company can choose from these three main cost systems. Deciding which system the company is going to adopt is very important, because not all systems give the same costs that have to be covered by a specific product.

2.2.2 Competition-based method

Competition based methods are based on the prices of the competition. What does the competition do with its price and how can other companies react to this price? This category is divided in four sub-categories namely similar pricing, pricing above competition, pricing below competition and pricing according to the dominant player in the market. These systems speak for themselves and need no further explanation (Avlonitis & Indounas, 2005). The advantage of these methods is avoiding price competition, which can damage the company. The disadvantage is not taking the costs of the company fully in consideration. This can lead to very low profits for the company and potentially the company can end up bankrupt.

2.2.3 Demand-based method

Demand based methods are the last category of pricing methods. The current demand of the product is the main determinant of the price offered by the company. A company can do this in several ways, namely perceived value pricing, value pricing and pricing according to costumers needs (Avlonitis & Indounas, 2005). According to Kotler and Keller there is one more demand-based pricing system, which is the auction type pricing mechanism.

Perceived value pricing is a popular pricing method among companies. It is made up from several elements namely buyers image of the performance of the product, channel deliverables, warranty quality, customer support but also supplier reputation and trustworthiness. The idea behind this is that a company must deliver what he promises in his value proposition. This needs a little persuasion from the company to show the buyers the value of the product they are going to buy. This way a company can charge a higher price than competitors if it makes people believe that their product has more perceived value in terms of for example warranties and customer services. The key is to deliver more perceived value than the competitors do. It is therefore important to understand what is going on in the mind of the costumer. This can be determined in several ways like focus groups experimentations analysis of historical data or a conjoint analysis (Avlonitis & Indounas, 2005) (Kotler & Keller, 2009).

Value pricing is also a popular pricing method among companies but for a different reason and with a different perspective. Using this method, a company sets a fairly low price with a high quality offering. It is about setting a low price and about cutting costs where possible without losing quality. There are two types of value pricing namely everyday low pricing (EDLP) and high-low pricing. A company, which has an EDLP method, does not have special price promotions or special sales the price is as it is every day. This ensures a stable income out of sales and lesser certain drawbacks. High-low pricing on the other hand charges a higher price on a daily bases but has special sales and price promotions in which the prices lie lower than EDLP. EDLP is more used than high-low pricing because consumers do not have time to follow all the promotions and like a sturdy price on the shelf. But high low pricing brings a way of excitement with it, which can excite consumers to buy a product this way so EDLP is not a guaranteed winning strategy. A lot of

supermarkets use a combination of the two (Avlonitis & Indounas, 2005) (Kotler & Keller, 2009).

Auction type pricing is a mechanism where consumers can determine their own price by doing bids on products/services. There are three main ways to do this namely, English auctions (ascending), Dutch auctions (descending) and sealed-bid auctions. With the English auction or ascending bids, there is one seller and many buyers. For example sites like eBay or Marktplaats where people can place a product for sale and consumers can put a bid on the product, whoever has the highest bid wins the auction and gets the product. Dutch auctions or descending bids have one seller and many buyers. The auctioneer announces a high price for the product and descends until a consumer accepts and wins the auction. One might think of the flower auctions in Naaldwijk and Aalsmeer. A sealed bid auction is like the name says sealed. The buyer does not know the other bids when he places a bid. This happens when governments want to outsource a job. Producers are placing bids to get the job but the tricky part is to not have a too high bid but also not too low, it has to at least cover costs. There is an increasing amount of businesses that use this kind of pricing for their business. The advantages are the overall satisfaction and a more positive future expectation (Ausubel, 2006) (Kotler & Keller, 2009).

The two most popular pricing methods are cost-plus pricing and pricing according to the markets average prices respectively. This is probably caused by the fact that these two methods are easy to implement. There are far less companies who choose customer based methods. This is probably due to the fact that it is very difficult to determine the exact demand from the customers (Avlonitis & Indounas, 2005).

2.3 Differentiated pricing/price discrimination

There are several ways companies adjust their basic prices to accommodate the difference in consumers, products and locations. This is an important part of pricing so higher margins can be earned. The difficulty however is to really know the market the company is in (gray, 2012). Price discrimination also known as price differentiation is asking a different price from different costumers without having different costs for the same product. Price discrimination depends on the heterogeneity of consumers. This means that different consumers are willing to pay different prices for the same product (Lambrecht, Seim, & Vilcassim, 2012). There

are three degrees of price discrimination first second and third degree respectively. This will only work if the company is a monopolist, Meaning he is the only provider of the service on the market (Frank, 2010). With price discrimination a provider can move some of the so-called consumer surplus to him and make it producer surplus, which is beneficial for the company.

First-degree price discrimination, also known as perfect price discrimination, is asking a different price to costumers based on their willingness to pay. This way in theory it can take away the entire consumer surplus there is in the market because everyone pays exactly the amount the consumer wants to pay (Kotler & Keller, 2009). In figure 1 the first-degree price discrimination is shown graphically. An example of first-degree price discrimination is the private market for second hand cars. The two parties negotiate until they agree on a price that the seller is willing to accept and the buyer is willing to pay. The seller sells the product, in this case a car, to the buyer who is willing to pay the most (Mallard & Glaister, 2008). Another example of first-degree price discrimination is Scalpers for concert/event tickets. The seller wants to get rid of tickets and sells these to the consumer who is willing to pay the highest price. A last example is the Saturday market for fruits market where consumers rarely pay the price that is shown on the stickers. This way every consumer pays exactly his valuation of the product (Ruby, 2003).

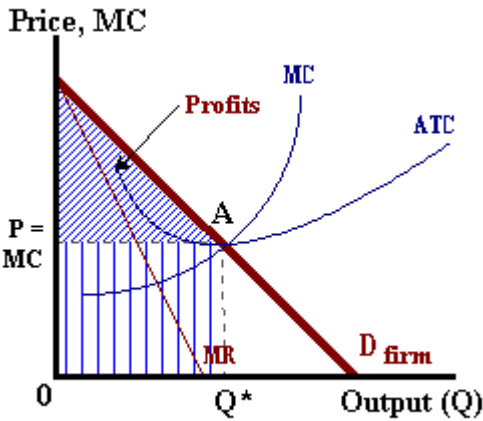


Figure 1 (Ruby, 2003)

Second-degree price discrimination, also called excess capacity pricing, is a system where people who buy more pay less per unit. In figure 2 it is shown that the price declines when the quantity increases. This system also tries to “steal” the most

possible consumer surplus it can. An example of second-degree price discrimination is the market for electricity. “Most of these companies use a system where the first 300 kilowatt-hours are billed at 10 cents per kilowatt-hour the next 700 are billed at 8 cents per kilowatt-hour and all quantities over 1000 are billed at 5 cents per kilowatt-hour. So consuming more means paying less per unit (Frank, 2010).” This sort of price discrimination is also used in airline and bus business to sell excess capacity in the form of seats. The price of seats start high and gets lower over time until the price equals the marginal costs, when the plain or bus scheduled departure nears the seats are getting cheaper, to sell the excess capacity (Mallard & Glaister, 2008).

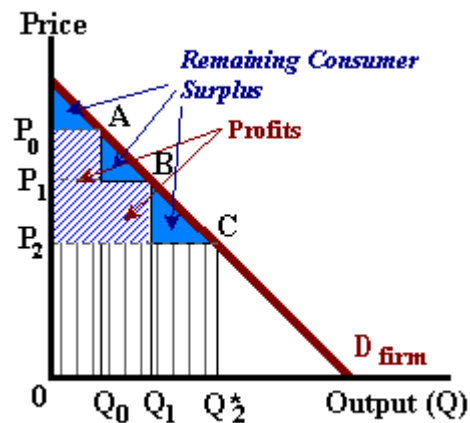


Figure 2 (Ruby, 2003)

Third degree price discrimination is the segmentation of consumers in different classes. This is done according to the elasticity of consumers. As can be seen in graph A from figure 3 the consumers are really price inelastic and so a small change in the price will also cause a small change in the quantity of a product. The consumers in graph B from figure 3 are really price elastic, which means that a small change in the price will cause a greater change in the quantity of a product. Dividing the market in segment can be done in two ways according to Mallerd and Glaister. Firstly, by dividing the market into clear groups where people have to identify themselves to show they are part of the segment. “Examples of this are bus companies who charge different prices for children and elderly on one hand and all of those in the middle on the other hand. But when entering the bus one needs to show they are part of the segment. Companies do this because they understand elderly

and children are more price elastic than the other group mentioned before (Mallard & Glaister, 2008).” Secondly, is to employ a self-selecting strategy. The company sets a couple of conditions that are likely to reveal the different segments. Examples of this are the airline companies, which charge a different price for people traveling on Mondays and Fridays then on mid-week flights. “This is because people traveling on Monday’s and Fridays are mostly employed and are thus traveling for business ends. This group is less price elastic than people traveling for leisure (Mallard & Glaister, 2008).” According to Kotler and Keller third degree price discrimination is divided in six different ways, namely customer segment pricing, product-form pricing, image pricing, channel pricing, location pricing and time pricing. Customer price segmentation is shown in the example of the bus providers who charge different prices for elderly and youngsters. This is differentiating on a feasible character of the consumer. With product-form pricing different versions of the same product are priced differently but not proportionally to their costs. Think of the different price one pays for a small bottle of water and a big bottle of water. The big bottle is relatively cheaper than the small bottle. With image pricing companies charge different prices for the same product they only wrap it in a different way, this is done with for example perfumes. With channel pricing the price differ depending where one buys it. “This is the case when on the one hand one buys a coca cola at a vending machine and on the other hand at a fancy restaurant where it is served in a glass with a slice of lemon and a straw. The product is the same but the prices differ considerably.” Pricing a product different at different locations even though the cost of providing the product is the same this is called location pricing. For example the airplane business, they charges different prices for first and second-class seats. So the location in the plane determines the price the consumer pays. Finally time pricing where a product is priced differently according to the time it is sold in. “Think of ice cream, which is cheaper in the winter than on a hot day in the summer when people pay top dollar for an ice cream cone (Kotler & Keller, 2009).”

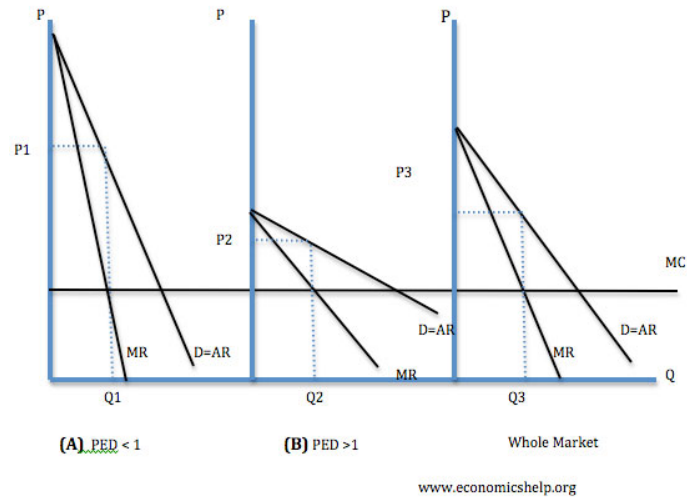


Figure 3 (Pettinger)

For price discrimination to work there are certain conditions that must be met. First the market must be segmentable and these segments must be recognizable. Consumers in the lower price segment cannot resell the product to consumers in the higher segment. Competitors cannot sell the product at a lower price. The price of segmenting must not exceed the revenue won by segmenting. This practice does not set ill will under the consumers and finally the form of price discrimination a company uses cannot be illegal (Bhasin, 2011).

3. KRVE

The core business of the mooring service is mooring and unmooring from sea going vessels. The mooring process will be explained, the mooring men receive a call with information of the vessel to determine the quantity of the equipment they need. Up to two boats and two cars with each two crew members come to secure the boat to the mooring site of choice. With the right equipment it can be done safely, fast and economically. As an example bollards (a sturdy post firmly fixed to the dock) will be used to explain the procedure. When a vessel enters the port, the mooring men receive the call and wait with the required equipment at the mooring dock. When the vessel is close, the mooring lines are thrown to the men on the launches (the vessels the mooring men use); this is all done under the supervision of the pilot on board. Then the mooring lines have to be handed to the lines men at the shore, this is done with another rope which is of course lighter with a weight on the end, this line is attached to the mooring lines so the shore man can lift it and attach it to the bollard. When the mooring line is attached to the bollard, a mechanism on board of the vessel starts tightening the line until the vessel lies sturdy on the quay wall (mooring, 2012).

The mooring company in the port of Rotterdam is called the KRVE (“Koninklijke Roeiers Vereniging Eendracht”). Rotterdam is one of the biggest ports in the world and the biggest port in Europe, it is thus important to have a good mooring company that runs the mooring business smoothly. The KRVE was founded in 1895 and is called royal since their 100 anniversaries in 1995. When this company started, all mooring was done by hand and with small rowing boats, now the KRVE has about 60 launches to work with but most of the work is still done by hand and is thus very tough. Mooring is not the only job of the KRVE, they also rent fully equipped vessels, vessel crews, bring pilots to/from the vessels by boat or car and also assist when there is a calamity, like setting up an oil screen when there is an oil spill. The KRVE also educates pupils up to fully certified mooring men, and is very innovative when it comes to mooring systems (krve, 2014). An example of such an innovative system is the shore tension, which makes sure the tension on the line stays constant all the

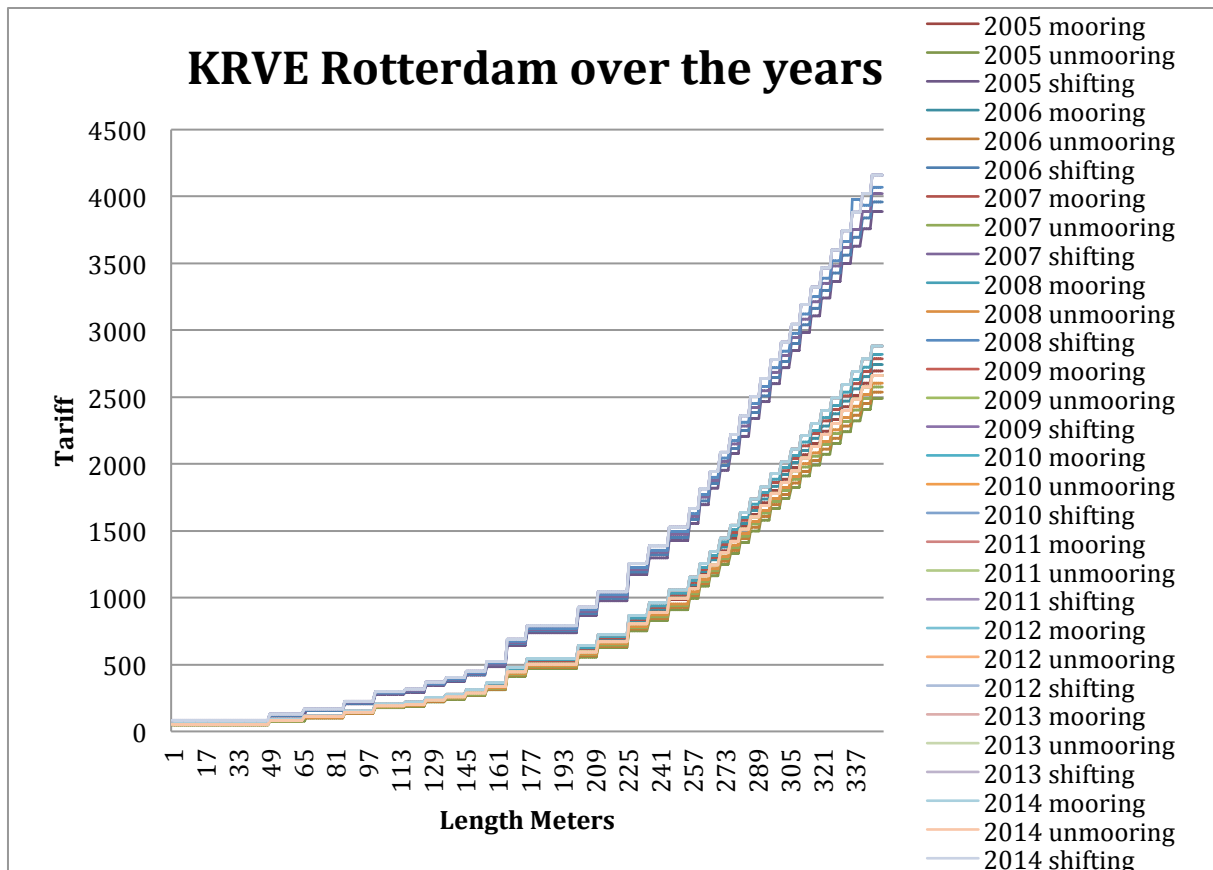
time and thus ensures a sturdy lying vessel. The KRVE sells this system to other ports all over the world (how it works, 2014).

4. Pricing systems

In this chapter different pricing systems of different ports (companies) will be investigated. What are points of interest in the pricing system? What is the overall shape of the pricing system graph? This will then be followed by linking the pricing system of the port to the strategies above. This is done to see if there could be a better pricing system for the KRVE. We first have to know their pricing system and the evolution the prices made over the last couple of years. Thereafter, the following ports will be compared; Rotterdam, Amsterdam, Antwerp, Hamburg and Gdansk.

4.1 Pricing system from the KRVE

The first pricing system is from the port of Rotterdam. To know if there could be a better system, we first need to know the ins and outs of the current pricing system of the port of Rotterdam. As can be seen in the previous chapter, the only company in the port of Rotterdam is the KRVE. The KRVE bases their prices on the length of the vessel. According to graph 1, the KRVE procentually made their price higher in the last couple of years from 2005 until 2014 there was an approximate price increase of 6,9 %. Also the price for shifting a vessel is a lot higher than the price for mooring and unmooring, which is pretty obvious because there is more to do for the mooring company if a vessel has to be shifted.

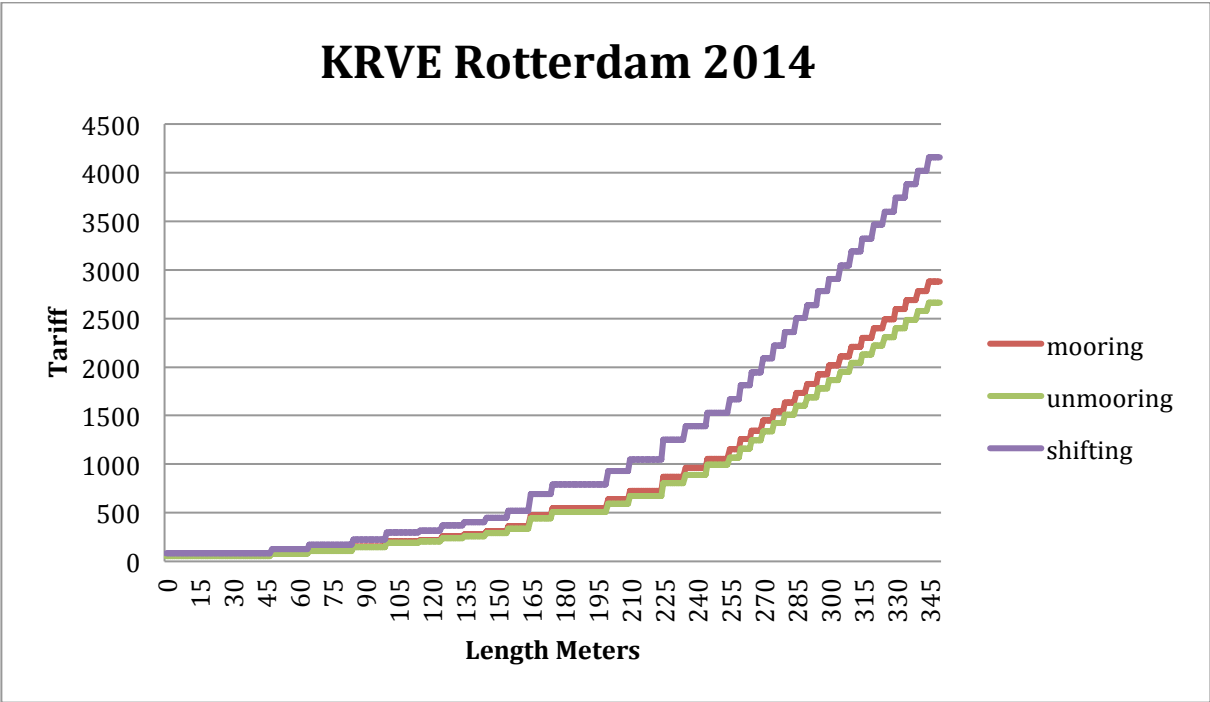


Graph 1 based on numbers of (bimco, 2014)

Graph 2 shows the pricing system of the KRVE for the year 2014 and there is an exponential curve noticeable. This means that relatively small vessels pay less per meter than relatively large vessels. This is probably because the mooring costs of large vessels are only a small part of the total cost and for small vessels they are a big part of the costs so mooring companies can ask relatively a lot of money to large vessels. The vessels from 170-meters until 195-meters are interesting in graph 2. These vessel sizes pay the same price opposite to other length of vessels that pay if larger a higher price. The last thing is the near linear relationship from 255-meter vessels until the biggest vessels. This means that for a vessel of 5 meters longer the using company pays 90 euros more per service as it comes to mooring and unmooring and 139 euro's more per 5 meter as it comes to shifting a vessel.

The objective of a profit company with a monopoly is mostly maximizing profit because they already have the large market share. However, the KRVE also wants to deliver a good product and there are probably some regulations of the port authority of Rotterdam that they have to follow. To make more profit the KRVE

innovates and sells these innovations to other mooring companies at other ports (krve, 2014).



Graph 2. Based on numbers of (bimco, 2014)

The pricing method the KRVE uses is a demand based pricing because the KRVE does not have competitors and it is not based on the cost of the product. Surely the costs have to be covered but the price is based on the current demand in the port. As long as there is a high demand for the product, the KRVE can ask what they want of course within reason. When demand decreases the price also has to decrease so the KRVE has to be on his guard for any possibly market entrants.

The KRVE uses third degree price differentiation to differentiate prices between customers. They divide customers into different groups based on the length of the vessel and ask a price accordingly. This way they can maximize their profit but stay fair to their customers with smaller vessels. The big advantage of this system is that it is very easy to use because the length of the vessels is known and price is based accordingly. The length of the vessel does not change over time so the vessels crew knows the price.

4.2 Pricing system from other mooring companies (at other ports)

In this section other ports and their pricing systems will be discussed. What are noticeable points in their pricing systems? What are the aims of their prices? And what kind of differentiation do these companies use to charge different prices to different customers. This is an important step, to see what the “competition” is doing and if the KRVE is doing something really different like asking too much or too little money or basing their price on the wrong variable.

Port of Amsterdam

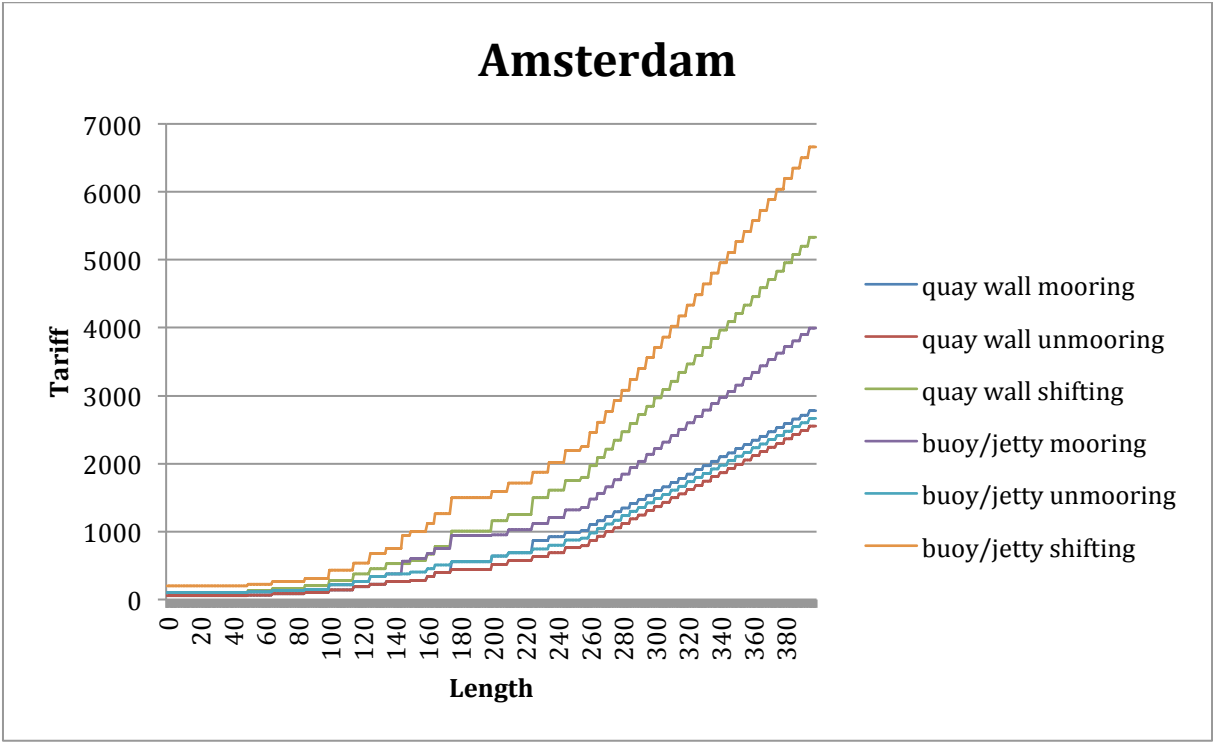
First the Koninklijke Verenigde ScheepsAgenturen van Halverhout & Zwart en Zurmühlen B.V. (KVSA), which is the mooring company in the port of Amsterdam in the Netherlands. The KVSA was established in 1876 and also provides reporting, stevedoring, terminal services, ships' agencies, maritime communication and web services (KVSA, 2014).

As can be seen in graph 3 the KRVE and the KVSA have the same shape in the curve, which is exponentially and also have a linear part in their pricing system. Compared to the KRVE the KVSA uses a more differentiated pricing strategy because they charge different prices for mooring and unmooring at a buoy and mooring and unmooring at the quay wall. Also vessels from 170 meters until vessels to 195-meter vessels pay the same price as opposite to other length vessels that pay different prices faster. Linearity starts at 255-meter vessels, which means that vessels of 5 meters longer pay 62 euros more as it comes to mooring and unmooring at the quay wall and 93 euros more as it comes to mooring and unmooring at a buoy. The point where mooring at a buoy becomes more expensive is for vessels larger than 140-meters and the point where mooring at the quay wall becomes more expensive at vessels larger than 220-meters.

The most probable price objective of the KVSA is maximizing profit. The KVSA already has the large market share and is sort of quality leader in this region because they have a monopoly. The port authority of Amsterdam will bound the KVSA in their prices.

The KVSA uses the same principle as the KRVE, it is a demand based pricing system, this is because the KVSA also does not have any competition in the port and thus does not have to focus on the competition. Of course also in this case the costs have to be covered but this is not the bases on which the KVSA bases their price.

The KVSA also uses third degree price discrimination to differentiate between customers. The KVSA does this based on length and on the place the vessel will be moored or unmoored. This system is also easy to use, because the length and place where it has to be moored is known. But there could be more profit in this system due to the higher prices for buoys and jetties. The KVSA does not charge a different price for shifting a vessel.



Graph 3: based on numbers of (bimco, 2014)

Port of Antwerp

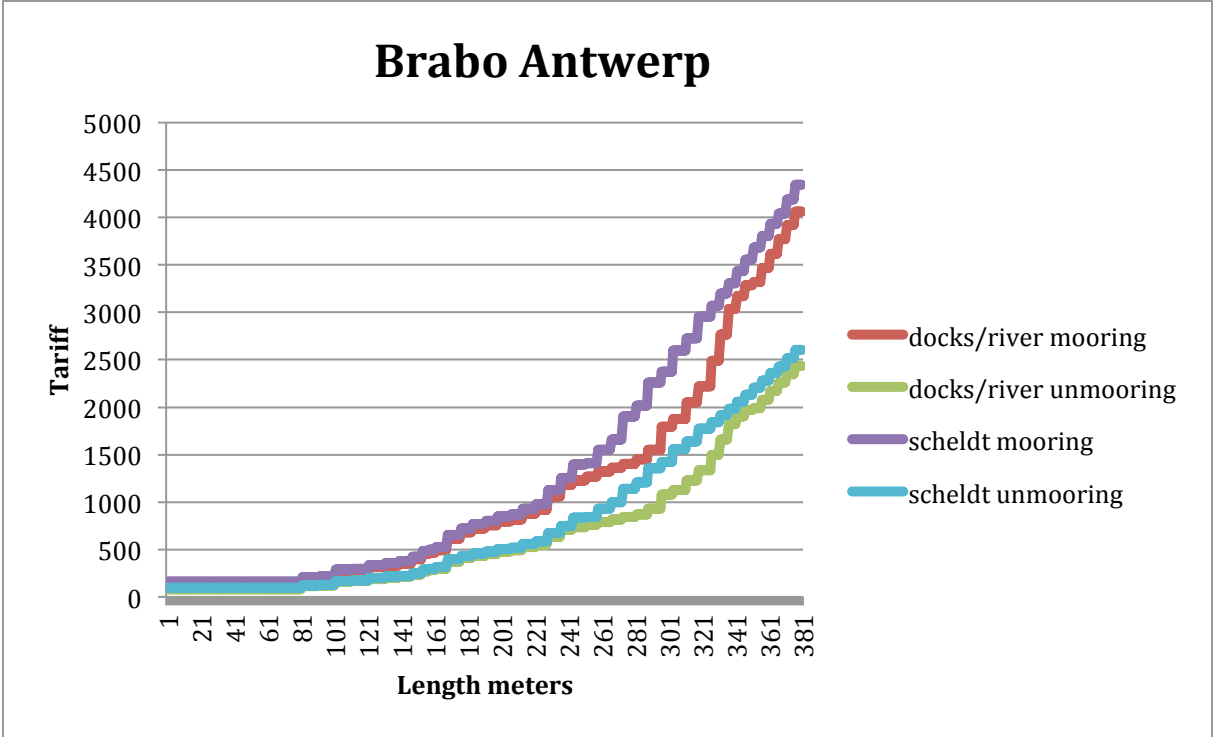
In the port of Antwerp in Belgium the mooring service is called CVBA Brabo and is the only provider of mooring services. Brabo provides the boats men and the pilots in the port of Antwerp and was established in 1931 (Brabo.com, 2014).

As can be seen in the graph 4, Brabo also uses an exponential pricing system, which is the overall shape, but not as clear as the KRVE. After a length of 370 meters both mooring and unmooring becomes linear per 5 meters extra you pay respectively 146, 88 euros at the docks and 150, 90 euros in de Scheldt. Another noticeable point is from 160-225 meters, where the price has a more root shape. This means that vessels of these lengths pay relatively less if the vessels are large and relatively more if the vessel is small.

The price objective of Brabo is likely to be maximizing profit because they already have the large market share and there is not the issue of survival because vessels need to be moored/unmoored in the port. Like the KRVE and the KVSA they will be “forced by their customers to innovate and deliver a quality service.

Brabo is also likely to use demand based pricing because Brabo does not have any competitors. Brabo is like the KRVE and KVSA, a monopolist in the port of Antwerp, which means that they do not have a competition based pricing method because they do not have any and costs will be covered if asking the right price. They are also probably bound to port authority of Antwerp.

Brabo also uses differentiated pricing similar as the KRVE based on the length of the vessel so customers are divided into groups accordingly but uses different prices for mooring and unmooring at the docks or at the Scheldt. This means that vessels, which need to be moored/unmoored at the Scheldt, pay more than vessels, which need to be moored/unmoored at the river. This way more profit can be made due to a better differentiation in the service delivered. Brabo does not use a different price for shifting a vessel.



Graph 4 : Based on personal correspondents with Brabo boatsmen

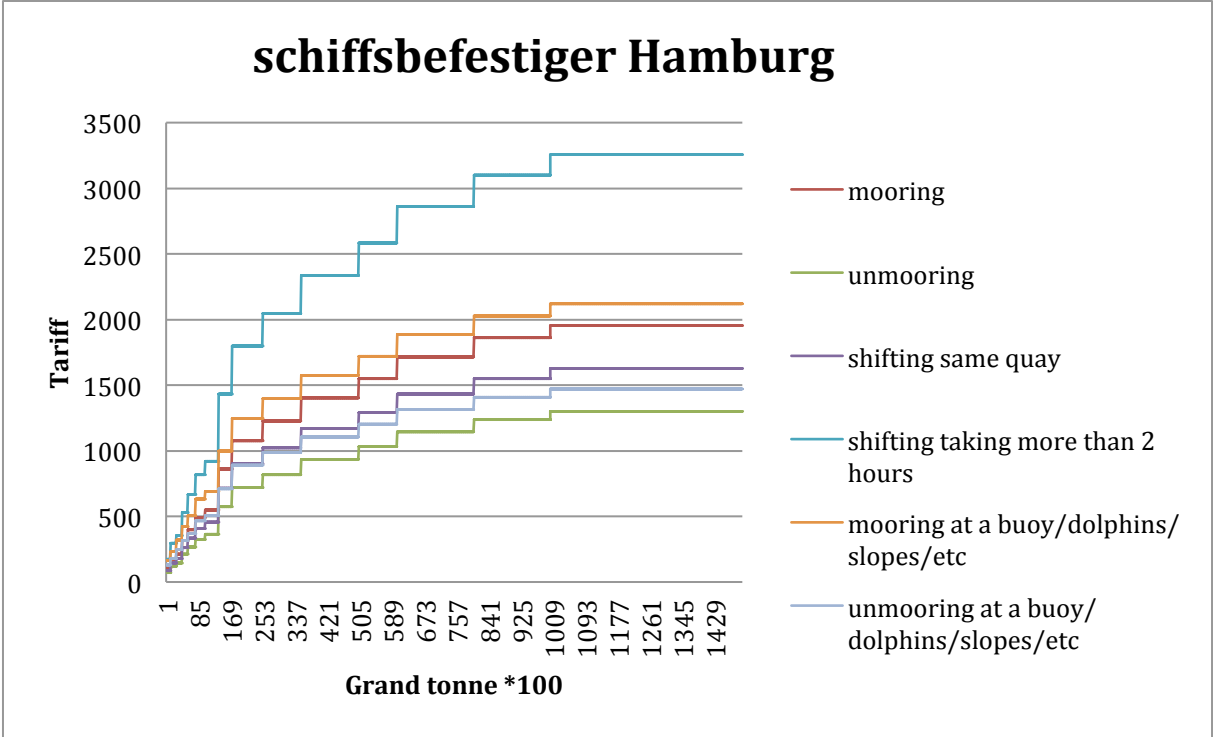
The Port of Hamburg

The mooring group from port of Hamburg Germany the mooring group is called der Arbeitsgemeinschaft Hamburger Schiffsbefestiger GmbH & Co. KG. (hamburger-schiffsbefestiger, 2014). This company was established in 1948 and treats 13000 incoming vessels a year. Schiffsbefestiger Hamburg has a price based on the Grand Tonnage (GT) of a potential fully loaded vessel. The company charges a different price for mooring and unmooring, for shifting and mooring and unmooring at buoys, dolphins and slopes. The noticeable thing in this graph is the root shape from 0-10000 GT and from 10000- ∞ GT as can be seen in graph 5. This means that vessels that can load relatively less are paying relatively more than vessels that can load more.

The price objective from the schiffsbefestigers Hamburg is likely to be just as in the other ports maximizing profit within the limits of the port authority of Hamburg. Schiffsbefestigers have little to no competition because it is a joined group of several companies. This way it can charge costumers relatively high prices for the services they deliver.

The pricing method schiffsbefestiger use is a demand based method where the price is established according to the demand of the service asked by companies. As in the other ports also Hamburg does not have to take competitors in consideration.

Schiffsbefestiger Hamburg also uses a third degree price differentiation to ask different prices from different customers. GT is also a variable that does not change over time, so the vessel owners know how much they have to pay in the port of Hamburg. It also differentiates more than the KRVE does, it asks different prices for mooring and unmooring but also shifting and mooring and unmooring at dolphins jetties and buoys.



Graph 5. Based on personal correspondents of Hamburger Schiffsbefestiger

The port of Gdansk

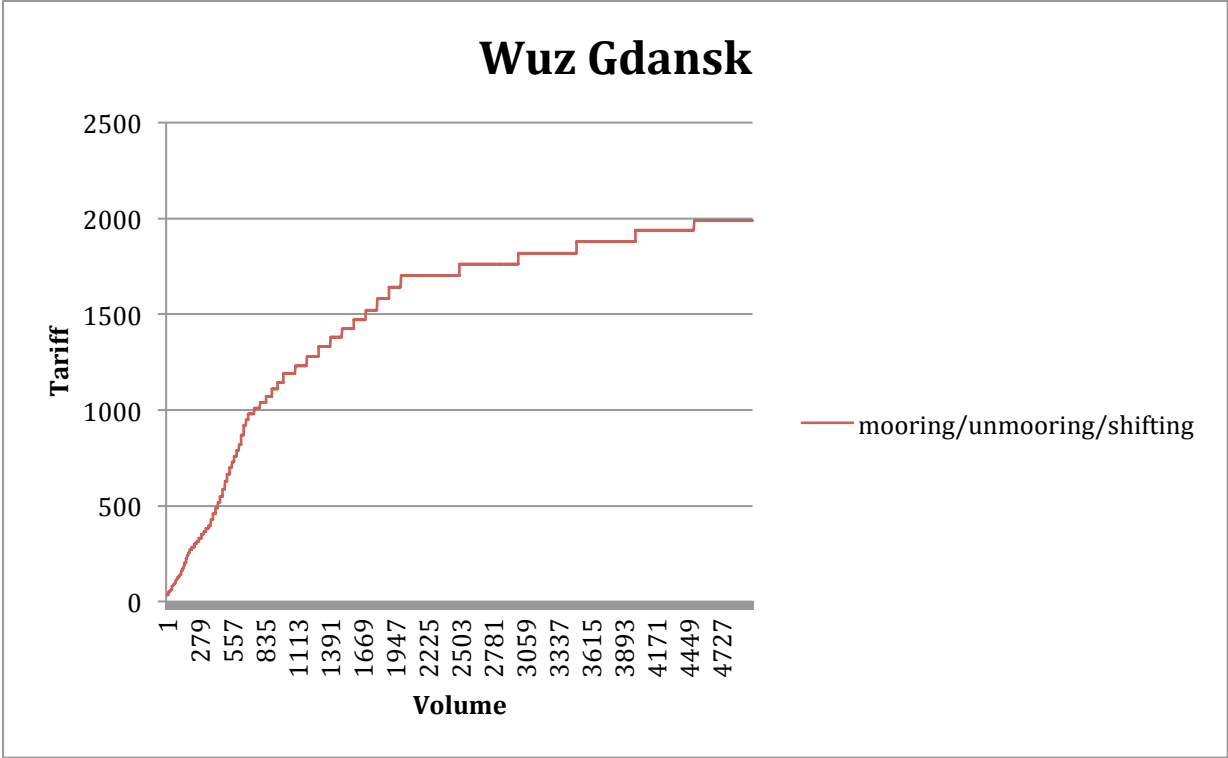
The mooring company of the port in Gdansk in Poland the mooring company is called WUZ Port and Maritime Services Ltd Sp. z.o.o. Wuz is established in 1991. Besides mooring it also provides harbor towage, ocean and coastal towage, handling of heavy pieces by floating crane – up to 63 tons, ice-breaking, passenger carried by a passenger boat and filling vessels by own crew (wuz.portgdansk.pl, 2014).

As can be seen in graph 6, Gdansk has a different shape than the KRVE. It is not based on the length or GT of a vessel, the pricing system of Gdansk is based on the volume of a vessel. The volume of a vessel is the cubic meters of a fully loaded vessel. This is also a variable, which does not change over time so the owners of the vessels know how much they have to pay in the port of Gdansk. This pricing system has a more root shape, which means that vessels that cannot carry as much pay relatively more per cubic meter than very large vessels and can load a lot as can be seen in graph 6. Also noticeable is the same price vessels pay for mooring, unmooring and shifting a vessel. This is different from other ports in Europe that charge different prices for different services like mooring, unmooring and shifting a vessel.

The pricing objective of WUZ is likely to maximizing profit because they already have the large market share, and do not need to survive because they are a necessity in the port.

WUZ uses a demand base pricing system because they do not have any competitors in the port of Gdansk and thus do not need to use competition based pricing. Costs based pricing is not being used because they ask the same price to the same volume vessel, but sometimes different vessel take longer to be moored or unmoored.

WUZ also uses third degree price differentiation based on the volume of the vessel, customers are thus charged accordingly. Noticeable is the same price for mooring/unmooring and shifting in this port for vessels with the same volume.



Graph 6: based on numbers of (wuz.portgdansk.pl, 2014)

5. Company comparison

In this chapter some examples will be shown to compare the position of the KRVE to other mooring companies in other ports. Therefore several vessels with different lengths, volumes and GT are chosen. In this case a feeder, handymax, car vessel, ferry, bulk, oil and container vessel. As can be seen in table 1 the KRVE is not charging the most in all cases even compared to Antwerp and Amsterdam who use the same charging variable. This is interesting to look at because with the same charging variable the KRVE can charge more money without customers getting upset. Hamburg and Gdansk have a root based pricing mechanism. This way these ports charge relatively cheap prices for large vessels and high prices for small vessels. So in the lower region and middle region lengths these ports charge a lot more but the really large vessels have a constant price and are charged as much as at KRVE.

The effects of these different pricing systems between the ports are almost non-existing because there is no competition between ports in different mooring prices. However different mooring companies can adjust their prices according to their “competitors” in other ports to increase their profit.

mooring								
	rotterdam	antwerp		amsterdam		hamburg		gdansk
		docks/river	scheldt	quay wall	buoy/jetty	wall	buoy jetty dolphin	
feeder	255	332	354	225	339	213	318	285
handymax	547	721	432	559	445	1227	1397	1190
car vessel	643	796	847	636	954	1550	1720	1700
ferry	724	875	525	684	1026	1401	1571	1470
bulk	1827	2553	2257	1473	2038,5	1859	2029	1820
oil	2594	2763	3196	1972	2787	1952	2122	1990
container	3862	4647	4943	2778	3996	1952	2122	1990
unmooring								
	rotterdam	antwerp		amsterdam		hamburg		gdansk
		docks/river	scheldt	quay wall	buoy/jetty	wall	buoy jetty dolphin	
feeder	237	199	212	225	339	142	247	285
handymax	505	767	460	938,5	559	818	988	1190
car vessel	594	477	508	522	636	1033	678	1700
ferry	670	525	559	570	684	934	1104	1470
bulk	1689	932	1353	1245	1359	1239	1523	1820
oil	2398	1658	1918	1744	1858	1302	2088	1990
container	3542	2790	2966	2550	2664	1302	2966	1990
shifting								
	rotterdam	antwerp		amsterdam		hamburg		gdansk
		docks/river	scheldt	quay wall	buoy/jetty	<2 hours	>2hours	
feeder	369	332	354	450	678	177,5	356,4	285
handymax	789	721	432	1497,5	1004	1022,5	2046,4	1190
car vessel	928	796	847	1158	1590	1291,5	2584,4	1700
ferry	1046	875	525	1254	1710	1167,5	2336,4	1470
bulk	2637	2553	2257	2718	3397,5	1549	3099,4	1820
oil	3744	2763	3196	3716	4645	1626	3255,4	1990
container	5549	4647	4943	5328	6660	1627	3255,4	1990

Table 1 :mooring/unmooring/shifting costs of vessels at different ports

6. Conclusion

The main question of this paper: **Is the current pricing system in the mooring service business of the KRVE still sufficient, or could there be a better pricing system?** There are a couple of steps taken to reach the final answer.

Firstly, different pricing strategies like survival, maximum current profit, maximum market share, maximum market skimming and product leader vessel were discussed. The leading price strategy in case of mooring companies is likely to be maximum current profit because the different mooring companies that were discussed did not have any competitors so already have the maximum market share and did not have to worry about a leading price strategy. These companies were also already grounded companies so were not surviving and the port authorities of those ports are keeping an eye on the price, products and services these companies deliver. This is an important issue for these companies because they do not have total freedom to do and ask whatever they want. These companies do have to follow certain rules and are monitored very closely by these port authorities.

Secondly, the different pricing methods, which were cost based pricing, competition based pricing and demand based pricing. In case of the mooring companies demand based pricing is the leading strategy. The mooring companies do not base their price on the costs because they are monopolist and can ask a higher price than a price just based on the costs and because these companies are monopolist they do not have to keep the competition in mind when they form a price. The only one important thing when forming a price is a demand based pricing method because the users of the product are the main determinants of the price if there is a high demand for the product the price will be higher than when the product is not highly demanded.

Thirdly, differentiated pricing which is a way to charge different prices from different customers. There is first, second and third degree pricing. This is the most important determinant for mooring companies because they can charge different prices from different vessels. Mooring companies use third degree price differentiation based on length, GT or volume of the vessels. This kind of pricing is important for the profit because a different base (length, GT, volume) can imply higher/lower profit margins.

The KRVE could ask a higher price for their services because Antwerp and Amsterdam also do that and provide the same product/service. Another possibility is to differentiate more in their prices and charge differently for mooring and unmooring at a buoy or jetty this because mooring/unmooring at a buoy or jetty is more work than mooring/unmooring at the quay wall. If the KRVE asks a different price for these services they can increase their profit. The way The KRVE prices are based on length is the correct way because a lot of large vessels come in to the port of Rotterdam and these vessels are charged a higher price. In Hamburg and Gdansk the middle-sized vessels pay a lot more but the large vessels have a constant price. After thorough research the main question can be answered the KRVE bases the price on the correct variable namely length but it can increase the profit when asking different prices for mooring and unmooring at a buoy or jetty compared to mooring/unmooring at the quay wall.

7. Summary

In this paper the mooring prices of the KRVE and mooring companies in other ports are investigated. To do this several other things have to be investigated like pricing strategies and pricing methods. Also the differentiated pricing method is an important variable in the mooring companies because different customers need to be charged with different prices. This will be followed by taking a look at different pricings of the different companies at Rotterdam, Amsterdam, Antwerp, Hamburg and Gdansk. Lastly an overview of the price several vessels pay in different ports. To really get an insight in the price of the KRVE compared to other mooring companies in Europe.

8. Bibliografie

Ausubel, M. L. (2006). *Auctions: Theory*. Maryland: Agorics.

Avlonitis, G. J., & Indounas, K. A. (2005). *Pricing objectives and pricing methods in the service sector*. Athens: Emerald.

Bhasin, H. (2011). *pricing strategies*. Retrieved May 27, 2014, from Marketing91: <http://www.marketing91.com/pricing-strategies/>

bimco. (2014). Retrieved may 08, 2014, from mooring, unmooring and shifting: https://www.bimco.org/~media/Operations/Tariffs/Netherlands/Rotterdam/Rotterdam_Tariffs_2014.ashx?RenderSearch=true

bimco. (2014). Retrieved july 15, 2014, from bimco: <https://www.bimco.org>

Brabo.com. (2014). (Brabo) Retrieved july 10, 2014, from Brabo.com: <http://www.brabo.com/nl/OverBrabo/Historiek/>

Frank, R. H. (2010). *Microeconomics and Behaviour*. New York: McGraw-Hill.

gray, t. (2012, april 19). *differentiated pricing*. Retrieved may 22, 2014, from tom-gray: <http://www.tom-gray.com/2012/04/19/differentiated-pricing/>

hamburger-schiffsbefestiger. (2014). Retrieved july 15, 2014, from hamburger-schiffsbefestiger: <http://www.hamburger-schiffsbefestiger.de>

Hilton, R. W., Maher, M. W., & Selto, F. H. (2008). Cost Management Strategies for Business Decisions. In R. W. Hilton, M. W. Maher, & F. H. Selto, *Cost Management Strategies for Business Decisions* (Fourth Edition ed., Vol. 1). New York, NY, VS: McGraw-Hill.

how it works. (2014). Retrieved may 08, 2014, from shoretension: <http://www.shoretension.nl/shoretension/how-it-works/>

Kotler, P., & Keller, K. L. (2009). Marketing Management. In P. Kotler, K. L. Keller, & M. Sabella (Ed.), *Marketing Management* (13th Edition ed.). New Jersey, NJ, USA: Prentice Hall.

krve. (2014). Retrieved may 08, 2014, from krve: <http://www.krve.nl/de-krve/welkom-bij-de-krve?lang=en>

KVSA. (2014). Retrieved july 07, 2014, from KVSA.nl: <http://ls.kvsa.nl/nl/nl/Default.aspx>

Lambrecht, A., Seim, K., & Vilcassim, N. (2012). *Price discrimination in service industries*. Key Largo: Springer Science+Business Media.

Lloyd, M. (2007). *Final report on mtcp tonnage measurement study*. Bremen/Brussels: European commission.

Mallard, G., & Glaister, S. (2008). *Transport economics*. London: Palgrave macmillan.
(2009). *Methods to price your product*. Alberta: Government of Alberta.

mooring. (2012). Retrieved may 08, 2014, from mooringbcn:
http://www.mooringbcn.com/amarres_en.php

Pettinger, T. R. (n.d.). *Price Discrimination*. Retrieved may 27, 2014, from economicshelp:
<http://www.economicshelp.org/microessays/pd/price-discrimination/>

Ruby, D. A. (2003). *first degree price discrimination*. Retrieved May 27, 2014, from digitaleconomist: http://digitaleconomist.org/pd_4010.html

Wasserman, E. (2010). *How to Price Your Products*. Retrieved may 22, 2014, from inc.com: <http://www.inc.com/guides/price-your-products.html>

Williams, P. (2008, august 6). *Pricing objectives and strategies*. Retrieved may 27, 2014, from marketing-and-branding: <http://marketing-and-branding.knoji.com/pricing-objectives-and-strategies/>

wuz.portgdansk.pl. (2014). Retrieved july 10, 2014, from wuz.portgdansk.pl:
<http://www.wuz.portgdansk.pl/en/about-company/>