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The Balancing Act of Ticket Pricing in Subsidized Performing Arts

Increasing Self-sufficiency in The Norwegian National Opera & Ballet

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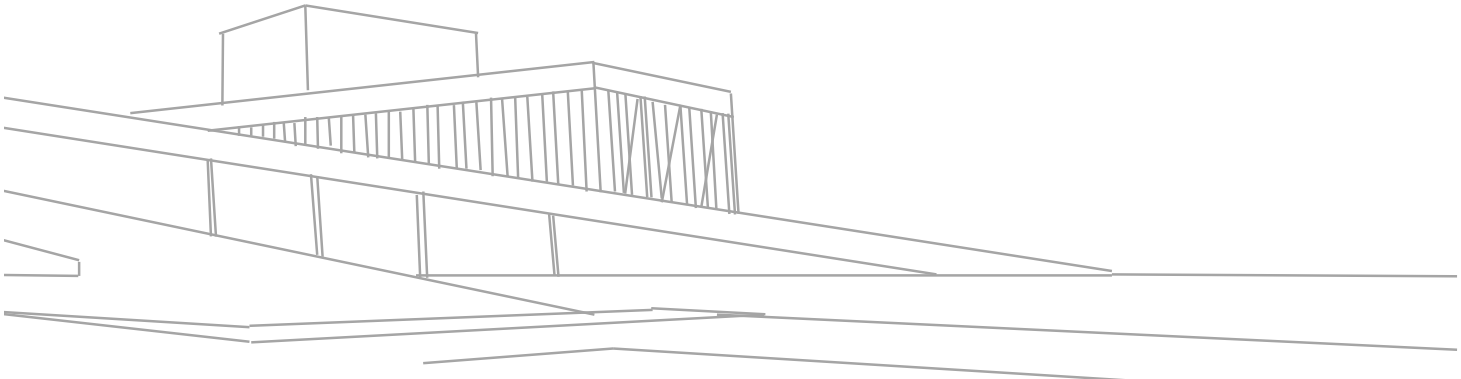

Summary

This master thesis aims to find out how to increase the self-sufficiency of performing arts institutions without making the performing arts a good for the elite. Generally, large opera houses will never be able to carry their own costs. However, in recent years we have seen major cuts in financing of cultural institutions in Europe. In Norway, the Norwegian National Opera & Ballet (DNO&B) have been facing rising economic challenges, and the national economic landscape indicates that an independent, sustainable economy is more important than ever.

The focus of this thesis is to see how one can change ticket prices in The Norwegian National Opera & Ballet to increase self-sufficiency.

The data used includes a sales log from the 2015/2016 season, as well as a market research report from a survey conducted by DNO&B. These data are analyzed to see when different customer groups purchase tickets and which seats they choose.

We find that sales are generally very high, but we also find that earnings are low due to the extensive use of discounts. We find that the quality of seat placement is more important to the customer than the ticket price. We find signs that those with the highest willingness to pay, pay too little and that there are too few tickets available for fully paying customers. Based on that, we introduce a new seat map with new price categories and prices. The estimate of the impact of the changes are 13.9-26.4 million NOK in higher earnings annually.

The literature review shows certain similarities in all art audiences. The results can therefore be of use to other national and international performing art institutions. A greater emphasis on public demand and a more dynamic approach to pricing could provide a more sustainable economy and ensure that art remains an accessible asset for all.

Acknowledgements

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Lastly we would like to give gratitude to friends and family for support and good times during a demanding semester.

Apart from war, opera is the most expensive activity to operate.
But it is much more pleasant.
-TERJE BASKERUD

Contents

1 Introduction

In this thesis we will investigate the financing of subsidized performing arts. Performing arts are forms of creative activity that are performed in front of an audience, such as drama, music, and dance [Oxford Dictionary, nd]. In this thesis we will exclusively focus on opera and ballet within the live performing arts genre. Opera is an art form that joins music, singing, drama, poetry, visual arts and sometimes dance. Ballet consists of most of the same elements as an opera, except the singing. We will look at these art forms and investigate their financing and audience. Our aim is to explore how one can increase the self-sufficiency of opera houses while being available to a wide audience, using The Norwegian National Opera & Ballet as a case study.

1.1 Live Performing Arts: A Cost Disease Industry

Staging an opera performance requires many resources [Agid and Tarondeau, 2010, p. 1]. The opera is a labour intensive activity which uses a highly skilled and therefore expensive labor force [Agid and Tarondeau, 2010, p. 11]. In most western opera houses personnel expenses accounts for about 70% of the operating expenditures [Agid and Tarondeau, 2010, p. 101-103]. Many of the opera performances that are shown around the world today were created more than a century ago when labour was a lot cheaper [Agid and Tarondeau, 2010, p. 1]. Today, the production costs are so high that only about one quarter is paid by those who attend the performances.

The operating expenditures have risen more than the inflation throughout the live performing arts entire history [Baumol and Bowen, 1968, p. 291-301]. Baumol identified this concept as the cost disease, also known as Baumols law. It appears when the costs are rising faster than the inflation, due to a lack of possibilities to increase the productivity in an industry. From these findings Baumol predicted that the costs would continue to increase in performing arts organizations in the future, to an extent where venues will not be able to balance their income and expenditures. These situations are found today in many opera houses, including The Norwegian National Opera & Ballet. Operating expenditures in opera houses are highly related to the decisions determined by the artistic management. It is important to ensure artistic freedom, and keep an arms length principle between the administration and the artistic management. Also, in the case of The Norwegian National Opera & Ballet, a big part of the expenditures are determined by law and cannot be changed by the administration. For these reasons we will not look into the expenditures in this thesis, but rather focus on the potential of increasing earned income.

The high expenses in a live performing arts organization is covered by a mix of earned and unearned income [Heilbrun and Gray, 2001, p. 152-158]. Earned income can be directly related to the operation and stems mainly from ticket sales, and fees for services. The latter is when a company is booked by a third party to do a performance elsewhere. Unearned income, also known as contributed income, cannot be related to the operation. It mostly consists of sponsorships, private donations and public grants. The earnings gap, also known as the income gap, is referred to as the difference between operating expenditures and earned income. Since total income in this type of operations normally equals expenditures, the earnings gap will often be the equivalent to unearned income. The size of the gap is measured by taking the gap as a percentage of expenditures. This is shown in Figure 1.

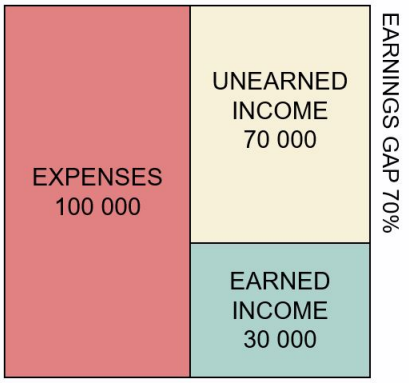


Figure 1: Illustration of the earnings gap.

1.2 Case: The Norwegian National Opera & Ballet

The earnings gap at the Norwegian National Opera & Ballet, hereafter DNO&B, is large, at 81% in 2016 [appendix B]. In the period 2014-2016 the media gave DNO&B great attention regarding their worsened financial situation. The annual report for the last available accounting year, 2016, states that the equity in DNO&B is -111 million NOK [Lysø, 2017]. This confirms that the trend continues to get worse year by year.

One of the main issues concerning the financial situation in DNO&B are pension liabilities. The Office of the Auditor General of Norway reveals that the pension costs has increased 168% from 2011 to 2014 [Foss, 2015]. The reason is the Opera Pension Law, Operapensjonsloven § 4 (1998), which states the retirement age (41-56) for artists which results in rising costs. The only way to affect the pension costs is by changing the law, and is therefore outside managements control.

There have been some government initiatives to examine the economic operation. In 2008, The Norwegian Ministry of Culture introduced periodical evaluations of heavily subsidized organizations within the field of stage and music [Røyseng et al., 2015]. DNO&B was evaluated by an expert panel in 2015. The panel concluded that the most significant way for DNO&B to bear its own cost, is in the organization's ability to engage in an active and conscious price policy. The Office of The Auditor General of Norway came to a similar conclusion in a report from 2015 [Foss,

2015]. They pointed out that the ticket income decreased in the period 2011-2014, even though the visitors numbers increased by 10% in the same period. Simultaneously, DNO&B is facing direct instructions from the government to cut cots [Lysø, 2016, p. 6-7]. In 2012 DNO&B had to cut 20 million of annual expenditures due to their financial situation. In 2016, they had to cut another 25 million of annual expenditures. DNO&B claims that this demand from the government leads to a reduction in staff and number of performances, and that the cost cuts are placing the quality and activity level at risk. Perhaps an alternative is to increase earned income instead of cutting costs?

However, pure profit maximization of income is not an option for any organizations that receive state subsidies. Every year, when DNO&B receives subsidies, this comes with a list of demands from the Ministry of Culture specified in the grant letter. For 2016 the grant letter states that the recipients should exploit their self-sufficiency, and develop detailed plans for different sources of income, especially regarding the ticket income [see Appendix A]. However, the Ministry of Culture also states that the goal for giving subsidies is securing access to high quality art for the general public. Raising prices is difficult without conflicting with this goal, since securing access to the general public implies groups with low income. The Minister of Culture stated in 2015 that the opera should raise the price level, due to the findings in the previously mentioned reports. The problem is to find the right price level. [Gjerde, 2015]

Despite the requirement to be widely available, there seems to be room for some price increase. DNO&B has experienced a steady audience growth the last decade [Lysø, 2016, p. 13]. In 2016, they held 89 opera performances with 92% seat coverage and 80 ballet performances with 95% seat coverage on the main stage [Lysø, 2017, p. 14-15]. Pricing is the only element of the marketing mix that directly influences revenue [Gabor, 1977]. With a tremendously high seat coverage there should be potential to increase revenue as an alternative to cutting costs. In this thesis, we analyze ticket sales data from fall 2015 and spring 2016. By combining insights from previous studies on art demand with exploration of who buys tickets for which seats at what time in DNO&B, we will develop a new pricing scheme for this venue. Our goal is to balance the budget and avoid deficit. We make four adjustments in the current price plan, increasing the ticket sale revenue by 25%.

2 Research Question

How can The Norwegian National Opera & Ballet fulfill the requirement from the Ministry of Culture to exploit potential self-sufficiency by increasing the earned income from ticket sales, without sacrificing general public access?

3 Literature Review

This chapter presents relevant literature on the economics of opera houses (Section 3.1), demand elasticity in performing arts (Section 3.2), the case subject The Norwegian National Opera & Ballet (Section 3.3), and finally pricing theory (Section 3.4).

3.1 The Economics of Opera Houses

In this section we will look at previous relevant literature on cultural economics related to opera houses and live performing arts. People unfamiliar with opera house economics might not know that these institutions are not profitable today [Agid and Tarondeau, 2010]. Both in Europe and the USA, opera houses are incapable of generating sufficient earned income to cover their operating costs regardless of their ticket price level. First the concept of Baumols cost disease is presented in Section 3.1.1, then we take a look at the current financial situation in this industry in Section 3.1.2. Third, the three funding models of performing arts are presented in section 3.1.3, and lastly section 3.1.4 shows the effect of these models on financial autonomy. Some of the literature is based on the live performing arts genre as a whole, which includes theater and orchestras in addition to opera and ballet. The reason for this is that it is common to study the live performing arts sector as a whole, not only opera and ballet.

3.1.1 Baumols Cost Disease

In 1966 William J. Baumol and William G. Bowen, two former Princeton professors published the book Performing arts: The economic dilemma – A study of problems common to Theater, Opera and Dance. The book is recognized to be the foundation of arts management [Towse, 2010, p. 10]. Baumol and Bowens book analyzed the economic implications of the characteristics of the performing arts. In this section we will highlight findings from this book.

Baumol and Bowen later described Chapter 7, *"Trends in the Income Gap"* as a highly relevant chapter from the book when investigating the costs and revenue in the live performing arts [Baumol and Bowen, 1968, p. 291-302]. They estimated that the income gap for professional performing arts organizations would grow at a rate between 6 and 8.3% which exceeded the rate of inflation. These numbers where calculated based on data up to 1966. The reason behind the high increase in the income gap is connected to the productivity and the costs of production. The economy as a

whole had productivity gains at a steady rate during the 20th century. However, they identified that the productivity in live performing arts would not develop at the same rate. It left little for labor-saving innovations, since the end product is the actual labor of the performer. It still requires the same amount of artistic personnel on stage, musicians to perform the live music, costume makers, makeup artists, hosts and so on. The conclusion in 1966 was clear, if this trend would continue in the same direction, the costs per performance should be expected to continue to rise more rapidly than the general price level. In every organization which Baumol and Bowen had data, the income gap had been growing and doing so quite steadily, in both European and American opera houses.

The findings from Baumol and Bowen's *"Trends in the Income Gap"* has later developed into Baumols law, which is also known as the cost disease [Towse, 2010, p. 10-12]. The cost disease appears when the costs are increasing faster than the inflation, due to a lack of possibilities to increase the productivity which is identified in the live performing arts organizations.

The cost disease resulted in what Baumol and Bowen first described as the income gap, later also called the earnings gap which was described in the introduction [Towse, 2010, p. 10-12]. The finding implied that the rising costs of supplying arts would mean that the earnings gap had to be covered by extra subsidies or an increase in the prices. Unless the earnings gap were covered, they worried that the opera houses would suffer an artistic deficit [Baumol and Bowen, 1968]. By this they meant that the organizations would be forced to cut back on quality so audience and society as a large would suffer. Baumol and Bowen found that the cost of preservation of the higher arts would be substantial and eventually rise inexorably.

Baumols cost disease has formed the basis of a larger number of studies after it was published on the economics in the performing arts [Towse, 2010]. The cost disease has been used as argumentation for the opera houses to ask for higher public subsidies for the arts. One important objection to the cost disease theory was that the industry could deal with ticket prices rising higher than inflation. Findings show positive income elasticity in this sector, which implies that demand can be sustained. We will get back to this issue in Section 3.2.

3.1.2 The Financial Situation Today in the Live Performing Arts Industry

The financial situation today in the live performing arts industry is under pressure. Many of the institutions are struggling to get the funding they need to operate under full power. Professor Gerd Uecker, former director of Semperoper - the Saxon State Opera, describes the problem with the financing in the live performing arts industry this way [Agid and Tarondeau, 2010, p. 260]:

"Unfortunately there is no homogeneous, fundamental regulation stipulating that the public authority governing the opera house and providing its funds must also compensate for pay rises resulting from its own action by adjusting theatre subsidies accordingly. In the long term, this situation will complicate opera houses' activities, for they will still be required to maintain their artistic level and balance their (often low) budget despite having to pay higher salaries."

In addition to increased costs in general, several performing arts institutions have been forced to make changes in the recent years as they have experienced reductions in their financing. After the financial crisis, it was much more difficult for opera houses in USA to receive financing both from earned and unearned income [Agid and Tarondeau, 2010, p. 259-260]. The Chicago's Lyric Opera reported a 13 percent decrease in box office income. The outcome of this was a 12% reduction in performances. The New York Metropolitan experienced a $10 million decline in donations. The result was that the managers got a 10% pay cut, and had to cut down $7 million in administrative expenses. New productions were cancelled to be replaced with old, classic productions to cut costs. In many parts of Europe, subsidies for culture were cut. Opera de Paris experienced a €10 million decrease in state subsidy from 2010-2015 [Opera National de Paris, 2016]. This forced them to increase other revenue with €18.5 million in the same period to balance their budgets, which shows that it is possible to make dramatic changes when subsidies are cut. However, this is one opera as an example of the possibility of increasing earned income, the trend is that most of the opera houses are struggling to follow the Opera de Paris' example.

3.1.3 Opera Management: Three Funding Models

In opera there are three main models for funding; the European, the American and the European in-between model. [Agid and Tarondeau, 2010, p. 157-180]. The two opposing models reflects that in Europe, opera houses are financially sustained because of their cultural and social value in the eyes of the public. In the USA, cultural organizations owe their existence to powerful, private initiatives.

The European Model

In Europe, high public subsidies and a marginal box office revenue dominate funding [Agid and Tarondeau, 2010, p. 157-180]. The reason for this is related to artistic and social traditions. Culture and the arts are considered to be public goods and therefore properly subsidized. Earned income represents an average of 20% of the budgets of opera houses and in many cases less. It is important for the cultural institutions to reach out to a diversified audience, and attract a young audience. This is a heavy weighted argument when setting the price policies. Affordability is a major concern,

and maximizing box office revenue is not an important goal everywhere. There is no significant tradition of private grants in this model, so they only bring a small proportion of the revenues when they are present.

The American Model

In American opera houses, the box office revenue is significantly higher than in the European opera houses, averaging around 36% [Agid and Tarondeau, 2010, p. 157-180]. 10-15% stems from old money, generated by endowments. Commercial and sponsored events also provide revenue. 50% is normally covered by private donations. An example of the importance of private donations can be observed in the board of directors at The Metropolitan Opera. To be a member of the board you are expected to give donations to the organization [Pogrebin, 2010b]. For example, Ann Ziff, chairman at The Metropolitan Opera gave $30 million to The Metropolitan Opera in 2010 [Pogrebin, 2010a]. History shows how American opera houses are created and supported by the individuals. Public subsidies are not financially significant in the American model.

The European In-between Model

The European in-between model is a combination of the two previous models mentioned [Agid and Tarondeau, 2010, p. 157-180]. This model includes opera houses with a comparable financial structure where public subsidy ranging between 30 to 55 %, earned income 25 to 45 % and private grants makes up between 10 and 30 %. This model holds for some opera houses in bigger European cities. This could be explained by the fact that the tax systems in UK, Spain, France and Switzerland allow both individuals and companies that donate money to cultural organizations to partially deduct it from taxes. These institutions in general have a higher earned income than the average European opera house. Public subsidies however remain crucial.

3.1.4 The Effect of Funding Model on Financial Autonomy, Earnings Gap and Ticket Price

Figure 2 shows different opera houses' performances. The x-axis shows the financial autonomy to several opera houses. Financial autonomy measures the total ticket income as a proportion of the total budget. This is measured as a percentage. [Agid and Tarondeau, 2010, p. 29-30]. This measurement places the opera houses within the European model to the left in the figure, and the American opera houses following the American model to the right.

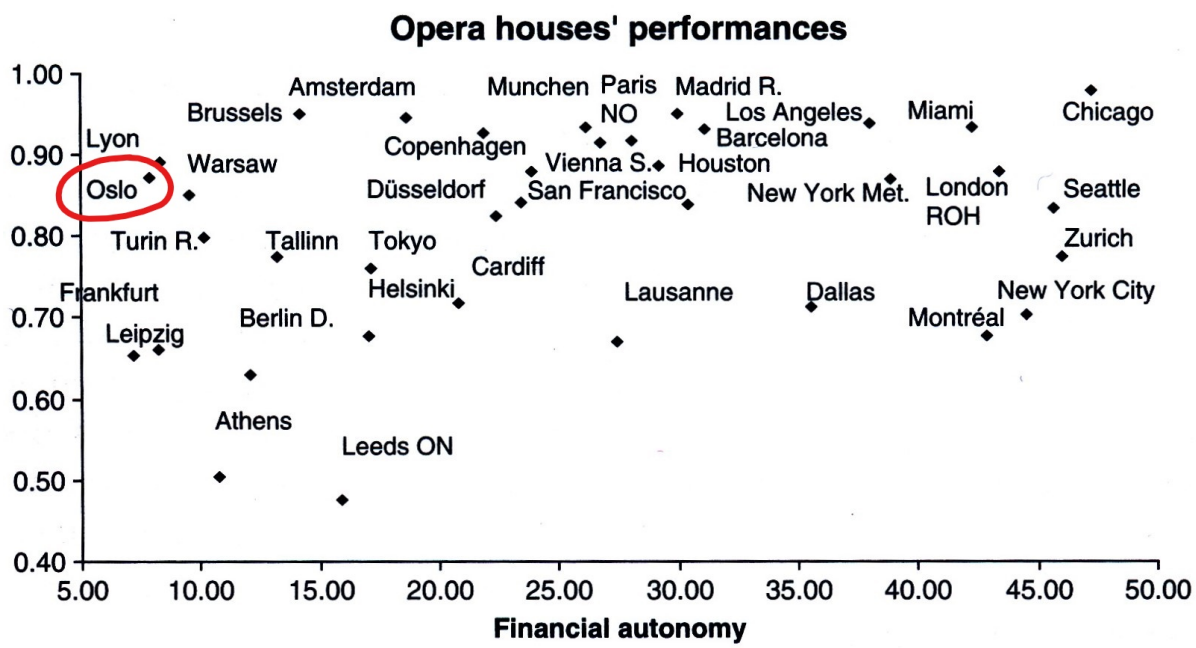


Figure 2: Opera houses' performances [Agid and Tarondeau, 2010, p. 238]

Financial autonomy has a similar function as the earnings gap [Agid and Tarondeau, 2010, p. 29-30]. Both measurements indicate to what extent the opera house is self run in terms of earned income. The higher the financial autonomy is, the lower is the earnings gap. In Table 1, several opera houses and their earnings gaps are shown. The percentage number differs remarkably. This is due to the opera management traditions, which vary among countries. However, the numbers clearly reveal that opera houses are highly dependent on unearned income to keep their operation going no matter location and funding model. The fact that the income gap differs in the European and American model can be due to other factors as well, like the seating capacity. In USA, the average seating capacity is 2400 seats, while in Europe capacity is only 1200. The opera houses in USA that have the highest box office revenue are located in large cities, with high seating capacity and often a lack of competition. In addition, there are wealthy populations in most of these cities. For example, the Metropolitan Opera is located in the New York area with 21 million inhabitants and a seat capacity of 4000. No matter city and population, it is clear that this industry is striving to keep up with their costs, just as Baumol found in his study.

LOCATION	ORGANIZATION	YEAR	EARNINGS GAP
Oslo	The Norwegian National Opera and Ballet	2015	83 %
Stockholm	The Royal Swedish Opera	2015	83 %
New York	The Metropolitan Opera	2014/2015	48 %
Paris	Opera National de Paris	2015/2016	54 %
London	Royal Opera House	2014/2015	45 %

Table 1: Earning gaps in different opera houses. For calculations and references see Appendix B.

Table 2 shows a comparison between ticket prices in different opera houses. There is a rather big difference in the price level among different opera institutions. The operas run by the American model have higher ticket prices than the ones represented by the European model. The difference between the highest and the lowest price is significant in all the opera houses.

TICKET PRICES	PARIS	OSLO	NEW YORK	LONDON	STOCKHOLM
	Opera National de Paris	Den Norske Opera & Ballett	The Metropolitan Opera	Royal Opera House	Royal Swedish Opera House
Low	94 NOK	100 NOK	199 NOK	62 NOK	54 NOK
High	2164 NOK	795 NOK	3822 NOK	2374 NOK	1054 NOK
Box office revenue of total budget	32 %	12.6%	52 %	34 %	12.64%

Table 2: Box office revenue and ticket prices [Agid and Tarondeau, 2010, p. 111]

3.2 Demand Elasticity in Performing Arts

Of all the most important empirical studies of demand for the performing arts between the 1960s and the early 2000s, more than two thirds shows that demand is relatively insensitive to price [Seaman, 2006]. Price elasticity of demand is a measurement of how much demand increases or decreases with a change in price. Price elasticities of demand are always negative numbers, since price and quantity demanded moves in opposite directions [Khan Academy, nd]. By convention, we often talk about elasticities as positive numbers. Mathematically, we take the absolute value of the result. It is calculated by dividing the change of purchased quantity with the change of price. If the price elasticity of demand is greater than one, the good is qualified as elastic, if it is less than one the good is classified as inelastic.

When it comes to demand for performing arts, the price elasticity coefficient typically range between -0.1 and -0.7 [Seaman, 2006]. This suggest that ticket pricing will alter the degree of seats sold, but not dramatically. A one percent increase in price leads to a 0.1 - 0.7% reduction in the quantity demanded.

Studies by Felton cited in [Seaman, 2006, Colbert et al., 1998] suggested that the elasticity is unequal between subscribers and non-subscribers. Subscriber demand seems to be more sensitive to price than among the non-subscribers. Colbert, Beauregrad and Vallée [1998] did a study to explore if parts of the consumers would be willing to pay more for tickets in order to increase the earned income in seven Canadian theatres. In Canada many of the theatre companies are also heavily subsidized by the state, and at that point art funds dropped dramatically as Canada's public administration were forced to make cut backs [Colbert et al., 1998]. This survey refined Felton's

research on performing arts consumers. They found two segments in both the subscribers and the non-subscribers, one group who was willing to accept a price increase, and one group who was more reluctant to a price increase. Both within the subscribers and non-subscribers it is the well educated high-income group who are willing to pay more for their tickets.

As we will see in the next section, there are certain factors that makes demand more or less elastic. However, we cannot know for sure whether the demand is in fact inelastic, or only appears to be so due to the response dominance of the upper-income majority in the literature [Borgonovi, 2008].

3.2.1 The Importance of Quality

Quality of the production seems to be an important factor in adjusting demand elasticity. The earlier demand studies held the quality aspect constant, if not completely omitting it [Colbert et al., 1998]. Throsby, according to Colbert et al., was the first to implement quality in the equation in 1983. He used critiques in newspapers to rank theatre productions on five different quality dimensions. This included repertoire classification, the quality of score, the standard of performance, design and production. The study proved that the score of these quality factors had a more significant effect on the demand than the ticket price. Other studies that has been conducted shows how size can affect the perception of quality. There is evidence that large size of the institutions budget [Touchstone, 1980] and the size of the orchestra [Luksetich and Lange, 1995] makes demand more inelastic. Both of these aspects can give an indication of high quality in the institution. In a study by Felton in 1992 cited in [Colbert et al., 1998], certain price elasticities actually proved to be positive, counter to the law of demand. According to the author, this can be explained by price being perceived as a measurement of quality.

The quality of the audio-visual experience also affect the elasticity of demand. Abbé-Deccaroux [Abbé-Decarroux, 1994] conducted a single theatre study to refine the quality research conducted by Throsby. The goal was to explore how the perception of quality affects demand. In this study, the demand of the different seat locations were studied separately, categorized as full-price tickets and discounted seats with lower audio-visual quality. He found that demand for the best seat locations in the high price range had a different demand curve than the cheaper seat locations. The less expensive tickets were far more elastic than the best tickets, which had a low elasticity. As Throsby's studies have shown [Seaman, 2006], this study also confirms that positive press reviews and high reputation of author, producer and cast makes the demand less elastic.

3.2.2 Demographics of Art Audience

The earliest empirical studies done in the 60s and 70s regarding audience characteristics highlights two important aspects [Seaman, 2006]. First, the art audience is not representative of the general population, but are elite in terms of education, profession and income. Second, these studies show that these characteristics are remarkably similar in all performing art forms.

In Norway we see the same pattern among the opera audience today [SSB, 2013]. A national survey from 2012 shows that consumption of opera is three times more likely among the highly educated population. Income is less decisive than education, but those with high income are the most frequent visitors. The same correlation between consumption and education is seen in ballet. However, the audience is slightly more female dominated than the opera audience. The audience on both art forms are dominated by the elder population.

3.2.3 Improving Diversity in the Performing Art Audience

None of the previously mentioned studies investigates whether price plays a different role in determining the demand for performing arts across the population in terms of level of income, education, ethnic background and so on. Borgonovi [2008] however, used 14 years of data from the UK Family Expenditure Survey to examine whether price reductions in the performing arts stimulates attendance in general, and among the low-income group in particular. The study shows that governmental subsidies have little or no effect in improving diversity in the audience. The estimate is an elasticity close to -1 in high-, medium-, and low-income groups. In other words, price reduction does have a positive effect along the demand curve, but this effect is equal among the entire population. There is no validation of the basic assumption that low-income groups are more responsive to price decreases than the wealthier part of the population. Therefore, one can argue that most of the subsidies finance the hobby of the wealthy population, but it also makes performing arts available to the people with low income.

3.3 About the Norwegian National Opera & Ballet

DNO&B is owned by the state and operates as a limited company owned by the Ministry of Culture and is subsidized through the state budget. Their mission is to *make life greater* with the vision *The Norwegian National Opera & Ballet shall be Norway's opera house* [Den Norske Opera & Ballett,

2015]. It is the biggest performing art institution in Norway with a total income of 774 246 145 NOK in 2016, and counting 318 786 visitors the same year [Lysø, 2017]. 629 were employed at the end of 2016 with a total of 598 full-time equivalents.

There is no specific quantified number for required earned income, but a budget that balances must be presented to the board and owners each year. DNO&B are free to set prices as they wish, but are required to *utilize their potential self-sufficiency* [Appendix A]. The Ministry of Culture states: *The overall goal of funding for cultural purposes is to help everyone gain access to high-quality art and culture and promote artistic development and renewal. In a contrasting and diverse society it is important to facilitate and promote a wide range of voices and cultural supply. Cultural facilities with public support must therefore be widely available so that those who wish are given the opportunity to participate in and experience a diverse cultural life* [Appendix A]. Beyond this, DNO&B does not have a stated price policy by its own.

3.3.1 The Norwegian National Opera & Ballet's competition in Oslo

In this section we will shortly examine pricing among DNO&B's competitors. We will only look at the relevant competition in the live performing arts sector in Oslo. There are no institutions that show opera and ballet with an activity level comparable to the Norwegian National Opera & Ballet. We therefore define the competition to high quality live performances, at acknowledged cultural institutions in Oslo. There are three grand theaters who receives state grants; Nationaltheatret, Oslo Nye Teater and Det Norske Teatret. They are showing contemporary drama, traditional drama, new Norwegian drama, theatre family shows, and musicals. Folketeateret is the fourth theater, it is the only private theater and does not receive government subsidies. Oslo Filharmonien is a philharmonic orchestra, and is also a relevant competitor. They receive state aid. All venues are situated within walking distance from each other. We have excluded guest performances in this category. Further on, we have excluded other entertainment activities like movie theatres, watching sports and other leisure activities.

The price level and discount schemes at the institutions mentioned is displayed in Table 3. The price level is similar in all the institutions which receives state grants. The philharmonic concerts are somewhat cheaper than the theatres. DNO&B are pricing the best tickets slightly higher than the theatres who receives subsidies, but remarkably less than the private owned theatre. The more remarkable difference occurs in the cheapest seats. The variation in price are greater here. In the theatre, the cheapest seats are far more expensive than the venues for music and ballet. The discount scheme is also quite uniform in all institutions. The only deviation being the private owned

theatre, Folketeateret, who only offers discount to OBOS members. All subsidized institutions offer student, children, senior, and OBOS discount, generally at the same level. In addition, the subsidized institutions also offer group discounts between 10 and 20 %.

VENUE	SHOW	DATE	FULL PRICE		Δ WEEKENDS	DISCOUNTS			
			HIGH	LOW		CHILDREN	SENIOR	STUDENT	OBOS
DNO & B	Don Quixote	Spring 2017	745	100	50	50 %	20 %	50 %	20 %
	La Boheme	Spring 2017	745	100	50	50 %	20 %	50 %	20 %
Folketeateret	Phantom of the Opera	Fall 2018	1245	395	-	-	-	-	20 %
	Les Miserables	Fall 2017	835	380	-	-	-	-	20 %
Olso Nye Teater	Cabaret	Spring 2017	650	340	-	ca. 50%	22-25%	ca. 50%	20 %
	En mann ved navn Ove	Spring 2017	470	275	-	ca. 50%	22-25%	ca. 50%	20 %
Det Norske Teatret	The Book of Mormon	Fall 2017	630	555	75	ca. 50%	20 %	50 %	20 %
	Kan nokon gripe in	Spring 2017	590	555	35	ca. 50%	20 %	50 %	20 %
Nationaltheatret	Som Dere vil/Don Juan	Spring 2017	595	220	25/50	25-50%	25-50%	25-50%	20 %
Oslo Philharmonic	All Ordinary Concerts	Spring 2017	470	100	-	40-80%	20 %	45-50%	20 %

Table 3: Price level of different performing arts venues in Oslo. All prices extracted from the venues websites.

3.4 Pricing

In this section we will briefly examine important aspects of pricing strategies. Later on we will look at literature in this field more specifically relevant to the live performing arts sector.

3.4.1 Pricing Strategies

Before choosing a pricing strategy it is important to evaluate the circumstances [Jensen, 2013]. Environmental factors to consider is the economy as a whole, the competitive situation in your industry, the government regulations, ongoing social trends and technological change.

There are mainly three pricing strategies you can use to set your prices [Jensen, 2013, p. 11]. First, the penetration strategy is used when you price lower than your competitors. Reasons not to use this strategy include the risk of giving your customers a perception of bad quality, and another is to avoid a price war. Second, the skimming strategy occurs when you price higher than your competitors. Third, competitive pricing occurs when you price approximately the same as your competitors. This last strategy is only recommended in two sets of circumstances. The first is when your new product is almost identical to the competitor's product already being sold, and the second is when your new product has very little advantage over competitor products and the competitors are tame and do not often compete hard against each other.

The most profitable price strategy in most industries is the skimming strategy if it can place you in a premium price position [Jensen, 2013, p. 36]. The skimming strategy requires a prestige pricing strategy, which implies that you need to have the best quality and one of the highest priced products on the market. The customers perceive this as a luxury product, and it needs to have a relative difference to your competitors. If this is not an option naturally, evaluate what changes it takes to get to this position. Look at your competitors negatives and benefits and evaluate what you can change to compete in your new position. One possibility to do this is to increase the numbers of add-ons with high profit margins [Jensen, 2013, p. 63]. This can for example be food and beverages or offer faster service. Review if you can charge higher price when evaluating the time of day, or the day of the week, or seasonal differences. Try to identify your segment and see if you can offer something particular for them.

3.4.2 Static and Dynamic Pricing in Performing Arts

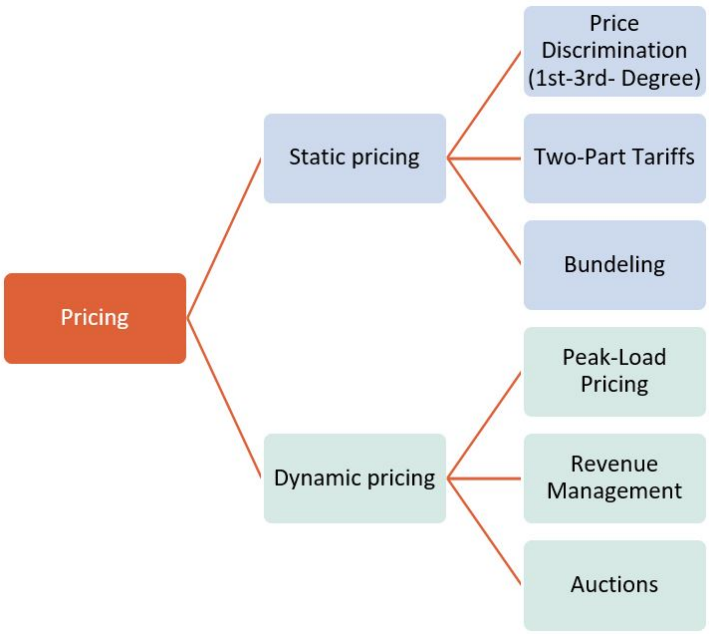


Figure 3: Pricing taxonomy, [Labaronne and Slembeck, 2015]

Assuming an institution is not a price-taker but has some degree of market power, it can make strategic decisions about prices. Figure 5 shows a brief taxonomy of different price structures that can be used to maximize profit. The static pricing are fixed and can not be changed in the short run. In performing arts institutions the time frame is usually one season. However price discrimination, two-part tariffs and bundling are commonly used. These tools help increase profit and make tickets available for a wider audience. Price discrimination occurs when the same good or service is sold at different prices to different customers. Price discrimination can take three different forms, named 1st, 2nd and 3rd degree price discrimination. In 1st degree discrimination all customers are given a price that equals their maximum willingness to pay. 2nd degree price discrimination takes place when different volumes of the same product are priced with different unit prices. Often throughout the

sales industry we find that bulk customers receives a lower unit price. Within culture, this discrimination can occur as group discounts and subscriber discounts. 3rd degree price discrimination can be given to maximize revenue by offering different prices to different groups of consumers based on their assumed willingness to pay. In order for this structure to be successful, different customer group with different willingness to pay must be clearly identifiable. Typically this can be age related, or connected to different memberships. When using two-part tariffs, the price for a service consists of a lump sum and a charge per-unit. Bundling means selling a package of products that are similar but not identical. This bundling strategy we often see in performing art institutions as subscriptions with a certain amount of different shows included in a fixed price.

In a dynamic pricing strategy, the prices are flexible instead of fixed. This allows the seller to adjust price according to demand. We will no briefly elaborate on the two strategies that are most relevant for the performing art sector: peak load pricing and revenue management.

The most simple form of dynamic pricing is peak load pricing. Some goods and services have peaks of demand. Peaks could be in a particular season, certain days or a particular time of day. Peak load pricing is then used to reallocate capacity by setting different prices according to the demand at the different times. If demand is unequal between matinee shows and evening shows or between weekends and weekdays, prices can be differentiated between high and low demand.

Revenue management (RM) refers to the strategy and tactics used by several different industries to manage the allocation of their capacity to different price classes over time in order to maximize revenue [Phillips, 2005]. The requirements for applying RM is that the seller is selling a fixed stock of capacity, the seller is selling tickets prior to an event, that there exists a range of price categories for the same good which is fixed in the short run and the seller can change the availability of the price classes over time. RM is a special case of pricing with constrained supply. The requirements illustrate that instead of updating the prices during the sales period, RM focuses on updating the availability of different price categories. The strategy behind revenue management consists of being capable to identify different customer segments, and identify the different segments price sensitivity according to their demand of a specific ticket [Phillips, 2005]. As mentioned, the most common in entertainment is to use 3rd degree price discrimination.

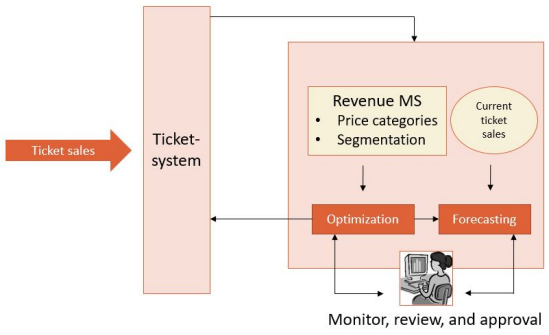


Figure 4: Schematic overview of a typical RM-system [Phillips, 2005]

However, there are several other factors that determine the customer's willingness to pay for a seat than the typical groups used for segmentation. An example of a successful pricing strategy from the Chicago Symphony Orchestra includes four important factors when pricing [Ravanas, 2008]. Number one is the scheduled productions popularity. Number two is the location of the seat relative to the stage. Number three is the time and date of the show, and number four is the time of purchase. All these factors will have an impact of the customer's price sensitivity and the demand for one specific show.

Capacity allocation is the problem of determining how many seats to allocate to the different price categories and segments. Capacity allocation is of great importance when a company is selling the same unit of constrained supply at two or more different prices. The concept of spoilage exists when you turn away demand in a cheaper ticket category, to protect seats for a more expensive ticket category, and the tickets are unsold [Phillips, 2005]. Dilution is the opposite. This happens if you reallocate seats to a cheaper price category, but there still were demand for this seats in a more expensive ticket category. This implies that you could have earned more on this seats.

To do all this, a revenue management system is necessary to calculate and update the booking limits [Phillips, 2005]. A schematic overview is shown in Figure 4. During the sales period, the revenue management system receives a feed of ticket reservations. Periodically the demand is reforecasted and new booking limits can be calculated based on the forecast of demand and remaining booking capacity. This is called a re-optimization. Updates can be triggered by a scheduled interval, event-driven updates, for example if suddenly one show has very high sales number, when a booking class is closing or by requested updates.

The airline industry was the first and the most important industry to use and develop dynamic pricing [Phillips, 2005]. Selling tickets at performing art venues has several things in common with selling airline tickets. In art venues, the capacity is fixed, and the marginal cost of serving one extra customer is practically zero. However, so far the current price regimes among subsidized culture institutions have been static regimes with various degrees of price discrimination [Labaronne and Slembeck, 2015]. Few studies have been conducted to explore the potential of revenue management as a dynamic pricing strategy in the performing art sector.

Labaronne and Slembeck [2015] used data from Swiss public theatres to discuss whether dynamic pricing could be applied to a wider extent in the heavily subsidized institutions in order to gain more profit. One thing the writer points out is that pricing decisions in the institutions studied are usually carried out by the artistic personnel more than the marketing and box-office managers. This could explain why new pricing strategies are not widely explored. Of all the Swiss theaters that

responded to the survey, almost two thirds stated that setting prices to reach a wide audience is more important than revenue.

The exploratory research by Labaronne and Slembeck concludes that implementing revenue management systems at the current time is not a straightforward matter. One reason is because subsidized culture organizations have to ensure serving a diverse audience. When profit is the focus, one might risk excluding parts of the population. Second, and perhaps most important, is that the theatregoers act in a different pattern than what we see in the airline industry. In travel services, the price insensitive customers are the consumers who are least flexible and conduct their purchases last. Desiraju and Shugan [1999] classified the services on the dimensions price sensitivity and commitment cost, see Table 4. Services with the consumption pattern found in the airline industry are classified as A. In class B services, this pattern is reversed. The price insensitive customers arrive early in order to get the best selection or in order to receive the product first. Class C services price sensitivity are uncorrelated with price, and consumption may occur at any time. Based on the survey of Swiss theatres, Labaronne and Slembeck [2015] argue that art consumers show a booking pattern different from what we find in class A services. The traditional revenue management systems used in the airline industry are not transmissible. However, Labaronne and Slembeck recommend the introduction of unspecified selective dynamic elements in order to react to demand and fill up capacity in this sector.

		PRICE INSENSITIVE SEGMENT	
		High commitment cost	Low commitment cost
PRICE SENSITIVE SEGMENT	Low commitment cost	A	C
	High commitment cost	C	B

Table 4: Classification of services by flexibility and price sensitivity [Desiraju and Shugan, 1999]

4 Diagnostics

In this section we will describe the data that is making the basis of our analysis. It consists of one dataset, and one market research. Further we will take a look at the secondary ticket market in Norway, and lastly summarize the opportunity to change price strategy.

4.1 Data Selection

The Norwegian National Opera & Ballet had a very steady increase in the total numbers of performances from 434 to 496 performances in the period 2012-2015 [Lysø, 2017]. What is important to highlight is that there was a high drop in number of performances in 2016. They dropped the total number of performances to 373. In the annual report this drop is explained by the financial cutbacks, requiring DNO&B to save money. The performances mainly occur on three different stages. The main stage is the biggest one and has a capacity of 1350 seats. Stage 2 is a smaller stage with a capacity of 440 seats. The last stage is the rehearsal stage with a minor capacity. Opera and ballet performances on the main stage had a drop from 182 to 169 from 2015 to 2016. Even though the opera and ballet performances account for less than half of the total performances at the opera house, they still stand for a significant size of the revenue since they occur on the main stage with the biggest seating capacity. In the period 2012-2016 these two genres on the main stage accounted for between 75.7% and 83.6% of the total ticket revenue excluding tours [for calculations see Appendix E]. Even though the other performances and stages might hold great potential to increase revenue, we have chosen to solely examine opera and ballet performances on the main stage.

The season at DNO&B starts during the fall and ends during the summer. The presale for subscribers opens in April, and the regular sale in May for the following season. Our data set consists of 5 out of 12 opera productions and 5 out of 7 ballet productions from the season 2015/2016. This season is the most recent available to us. The 2015/2016 season had a total of 207 performances on the main stage, whereof 189 was Opera/Ballet/Classical Concerts, and 18 concerts of other genres. Our data set consists of 102 performances in total which is 54% of the total amount of main stage performances in DNO&B's season program.

The selection of productions in our data set is based on the following terms. The production had to have five performances or more as the bigger productions are often more popular and can potentially bring in more revenue per production. Also, when there are more productions, customers generally

have a better opportunity to pick their preferred seats. Reruns, co-productions, new productions and premieres were represented to ensure a broad selection of data. The selection also consisted of performances that were both sold out and with available capacity. The selection is presented in Table 5.

The reruns are productions that have been performed at DNO&B in the exact same way before. Co-productions are produced with other opera houses, which benefits from the fact that someone already have produced the whole opera including stage setting, costumes and so on. It is more cost-efficient than producing a whole new production. Katja Kabanova is listed as a rental production with Hamburgische Staatsoper, Turandot as a co-production with Semperoper Dresden and Anna Karenina as a co-production with Ballett Zürich. Manon was a new production for DNO&B and also a Norway premiere. The Magic Flute is a new production of a popular old opera. We have not gone deeper into the artistic expression of the different performances.

PRODUCTION	PREMIERED	TYPE	SEASON	PLAYS (102)	COVERAGE
Opera					
Don Giovanni	1787	Rerun	Fall	5	75 %
Katja Kabanova	1921	Co-production (new)	Fall	8	63 %
La Traviata	1853	Rerun	Spring/Summer	10	100 %
The Magic Flute	1791	New Production	Winter	9	100 %
Turandot	1926	Co-production (new)	Spring	10	99 %
Ballets					
A Swan Lake	2014	Rerun	Spring/Summer	11	99 %
Anna Karenina	2014	Co-production (new)	Winter	11	99 %
Giselle	1841	Rerun	Fall	7	79 %
Manon	1974	Norway Premiere	Fall	11	79 %
The Nutcracker	1892	Rerun	Winter	20	100 %

Table 5: Overview of productions in our dataset

4.1.1 Description of the Dataset

The data set is a sales log which contains information about 125.824 tickets on the 10 opera and ballet productions extracted. All the tickets distributed are registered through the sales portal the opera uses, Billettportalen. The data consists of the following variables: specification of production, date of performance night, time of purchase, ticket category, price category, the actual ticket price paid, section, row and seat. There has not been any personal information in any of our material. The price category consists of 7 different price categories, A-O. A=791 seats, B=189 seats, C=224 seats, D=28 seats, E=36 seats, F=66 seats, and the last one O=16 standing-room tickets. How these categories are placed within the venue can be seen in Figure 5. Category A is slightly smaller in A Swan Lake and The Magic Flute. The ticket category consists of 51 different categories which relates to different types of discounts. These are for analytic purposes aggregated in fewer categories. We have excluded one performance night in the calculations in this section which was exclusively open to OBOS members, leaving us with 124.487 tickets. Further on we

will explain the pricing scheme, and the function of the different ticket categories in detail.

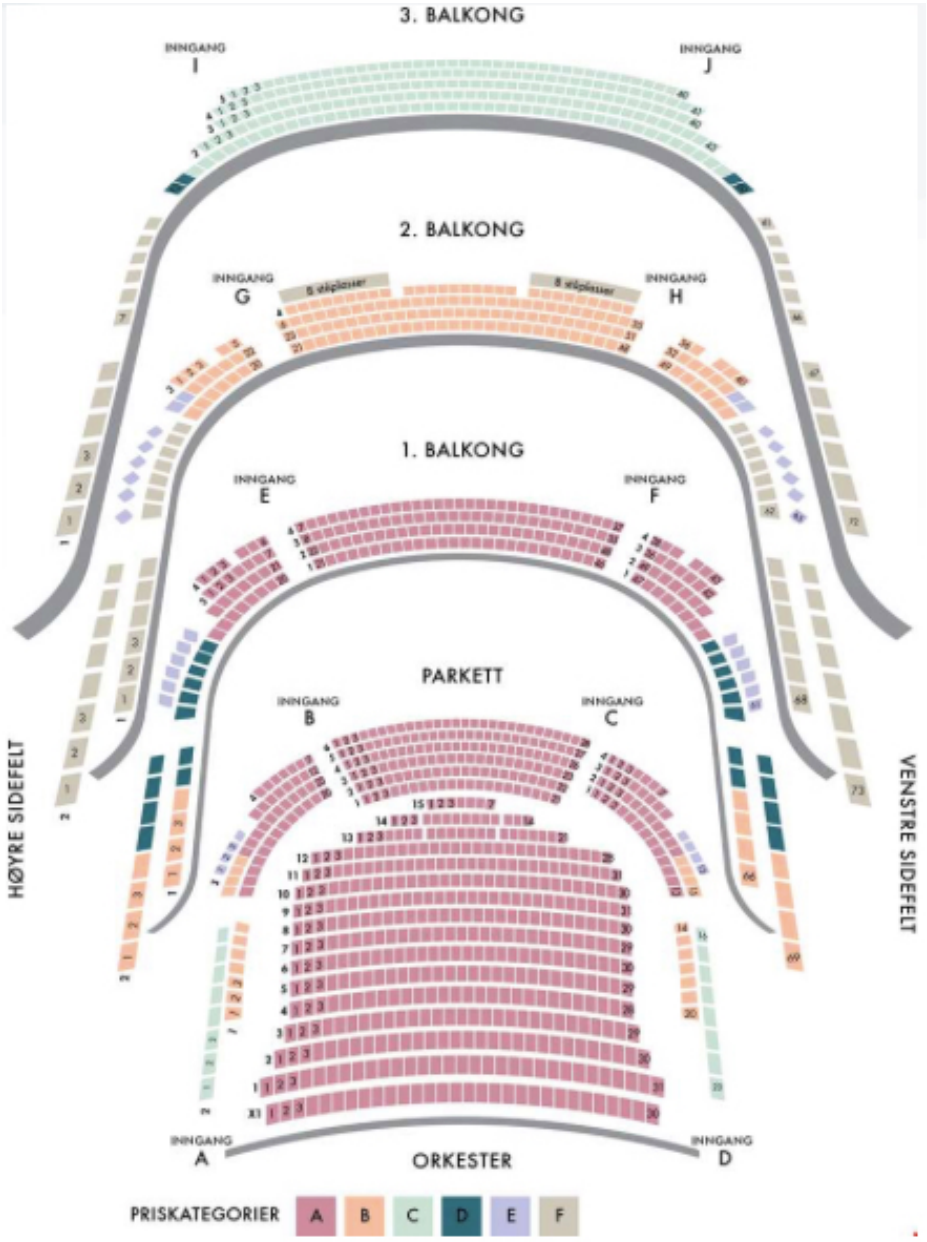


Figure 5: Seat map of the Main Stage

4.1.2 Weaknesses of the Dataset

The performances in the opera house are varied in style. Without in-depth knowledge about the performances, it is hard to know if certain shows appeal more to a certain group, or if the popularity is very different. Therefore, one weakness of the dataset is that the sample collection itself could be unrepresentative for the whole year at the opera house. We only had information on seat coverage in the performances that were done playing in December 2015, when requesting the dataset. Therefore, we made the assumption that if our selection consisted of a variety of new shows, co-productions and reruns, classic and modern pieces, a mix of shows that were sold out and shows that ended up having free capacity, this would in total make the sample representative of all productions. To include all productions would require more resources from DNO&B. The data had to be extracted from the ticket sales system provider and be anonymized by staff at DNO&B. Data from all productions would also be hard to handle in terms of size. However, the sample collection we asked for originally included more productions than what we received in the end. The dataset has a preponderance of ballet, in relation to the number of performances of ballet versus opera. In total, our sample covers more than half of the performances of opera and ballet on the Main Stage. This should be sufficient to draw some conclusions regarding purchasing patterns. On the positive side, the data set is quite detailed, with exact purchasing time and seat location. The sample size is large, and as fresh information as we could possibly get.

Another weakness is that the data set does not inform about how many tickets are available at a current time in a category for the customers. As mentioned, a full capacity is 1350 seats on the main stage. However, all these seats may not be available for booking at all times. Seats can be held up for invited guests, sponsors, filming and so on. Because of that it can be that some tickets are released just prior to the show. This means that some seats would appear sold or unavailable to the customer at Billettportalen, but later would be up for sale if DNO&B unfreezes these reservations. On A Swan Lake, they start selling a lot of tickets, then suddenly some months are following with very few tickets sold, and when its getting closer to show date there are suddenly a lot of tickets sold. It looks like this production follows the pattern explained in this paragraph.

4.2 Price Structure in the 2015/2016 Season

The pricing scheme of the ten products in our data shown in Table 6 are to some extent diversified. There are six different price categories A-F, where discounts is given on category A-D. The prices follow a fixed structure where category A is the most expensive ticket ranging between 595 and

795 NOK. Category B is 50 NOK cheaper than A, category C is 100 NOK cheaper than B and D is 100 NOK cheaper than C. Category E has a fixed price on 200 NOK on all performances, and F and O has a fixed price on 100 NOK on all performances. We assume the difference in prices is based on the estimated popularity of the production. All tickets in category A-D costs 50 NOK more on Fridays, Saturdays and premiere nights. This is why the full price column has two prices in the table. We are only displaying categories that normally have discounts; A-D. These categories normally add up to 91% of the capacity of the venue. All prices shown are without ticket fee. The ticket fee is fixed to 20 NOK per ticket, and is excluded in the dataset. The sales price paid by the customer is therefore 20 NOK more on all the prices listed in table 6.

	Average achieved price all categories	A		B		C		D	
		Achieved average	Full price	Achieved average	Full price	Achieved average	Full price	Achieved average	Full price
BALLET									
A swan Lake	kr 473	kr 525	725/675	kr 497	675/625	kr 462	575/525	kr 356	475/425
Nutcracker	kr 404	kr 450	675/625	kr 436	625/575	kr 369	525/475	kr 291	425/375
Anna Karenina	kr 381	kr 443	625/575	kr 433	575/525	kr 267	375/325	kr 268	375/325
Giselle	kr 380	kr 414	625/575	kr 396	575/525	kr 348	475/425	kr 280	375/325
Manon	kr 361	kr 402	625/575	kr 374	575/525	kr 284	475/425	kr 272	375/325
ALL BALLETS	kr 403	kr 449		kr 436		kr 359		kr 295	
OPERA									
Turandot	kr 501	kr 559	775/725	kr 530	725/675	kr 466	625/575	kr 409	525/475
Don Giovanni	kr 468	kr 521	725/675	kr 499	675/625	kr 446	575/525	kr 375	475/425
La Traviata	kr 500	kr 559	725/675	kr 536	675/625	kr 465	575/525	kr 377	475/425
The Magic Flute	kr 448	kr 498	725/675	kr 487	675/625	kr 432	575/525	kr 344	475/425
Katja Kabanova	kr 338	kr 371	625/575	kr 351	575/525	kr 171	375/325	kr 269	375/325
ALL OPERAS	kr 463	kr 510		kr 502		kr 439		kr 368	

Table 6: A comparison of list price and average sales price in different price categories. The two different numbers in full price refers to the price on weekends/weekdays. Price paid by the customer is 20 kr more, due to a ticket fee.

The average achieved price in category A, B and C has a significant difference from the full price in the same categories. If we compare the full price in category A, to the achieved price, the biggest price leak is 254-204 NOK on Katja Kabanova, and the lowest is 166-116 NOK on La Traviata. The average price difference between category A and B is only 13 NOK on ballet and 8 NOK on opera, even though the actual full price difference is 50 NOK between these categories. Same tendency is found between category B and C where the fixed difference is 100 NOK. In the achieved prices, ballet performances have a 77 NOK average difference, and opera performances have a 63 NOK difference. It is clear that in these categories, the actual differences are much smaller than the differences in the full price. We find that on some shows, category B tickets is on average more expensive than category A tickets.

4.3 Ticket Categories & Discount Schemes

In order to understand the low average price, we need to take a closer look on how the tickets are distributed among different ticket categories. As mentioned, the data set includes 51 different ticket categories with various discounts. Not all categories are used in all productions. Here, we will group them into 13 different categories. Full price, employees, children, subscribers, student, OBOS discount, free tickets, senior discount, group discount, promotions, NTO discount, sponsor discount, and other discounts. We will now explain how they are grouped and what the new categories are in more detail. In Table 7, we see distribution among different ticket categories.

SHOW	FREE CAPACITY	FULL PRICE	SUBSCRIBERS	OBOS	SENIOR	CHILDREN	GROUPS	EMPLOYEES	SPONSORS	FREE TICKETS	PROMOTIONS	NTO DISCOUNT	OTHER
La traviata	0 %	41 %	8 %	15 %	17 %	2 %	7 %	3 %	1 %	1 %	0 %	1 %	0 %
The Magic Flute	0 %	27 %	12 %	12 %	13 %	6 %	14 %	4 %	2 %	3 %	0 %	1 %	0 %
The Nutcracker	0 %	28 %	6 %	14 %	6 %	21 %	6 %	3 %	5 %	1 %	0 %	1 %	0 %
Anna Karenina	1 %	31 %	13 %	16 %	10 %	3 %	5 %	6 %	3 %	2 %	0 %	2 %	1 %
A Swan Lake	1 %	32 %	12 %	17 %	7 %	5 %	9 %	4 %	4 %	2 %	0 %	2 %	0 %
Turandot	1 %	25 %	26 %	9 %	13 %	2 %	11 %	5 %	2 %	2 %	0 %	2 %	0 %
Manon	21 %	21 %	24 %	8 %	9 %	2 %	2 %	9 %	2 %	3 %	9 %	2 %	2 %
Giselle	21 %	29 %	14 %	14 %	11 %	5 %	3 %	6 %	1 %	1 %	3 %	1 %	3 %
Don Giovanni	25 %	27 %	17 %	9 %	12 %	1 %	7 %	5 %	5 %	2 %	9 %	1 %	0 %
Katja Kabanova	37 %	13 %	42 %	5 %	6 %	0 %	2 %	8 %	1 %	7 %	8 %	2 %	2 %

Table 7: Distribution of ticket categories

Full Price

Full price consists of five ticket categories. This category is the standard adult ticket category which can be found in three categories in total, but it also includes the two categories free pass for accompanying person and gift card. DNO&B is obligated by the Ministry of Culture to provide free tickets for accompanying persons [Appendix A], therefore this category cannot be influenced by DNO&B, and should be treated as full price for analytic purposes. This category is only used on 0.2% of all tickets in the dataset, so we have no reason to believe this category is unlawfully used. Gift cards can be used in combination with age related-, student- and OBOS-discount. As most tickets within this category appears to be full price, calculating the true discount for all of these would be inexpedient, therefore all gift card are counted as full price. The true full price is therefore slightly lower than the list full price.

Employee Discounts

Consists of two categories. All permanent staff can buy two discounted tickets for each production that they might use for themselves or give away to friends and family. The discount varies with show and seat location, but is typically between 60-80%. Temporary staff can buy tickets for performances they are involved in. Staff that are selling tickets and working with promotion receives free tickets registered under employee discount. 2130 free tickets were given to staff. Of these, 1100 were tickets for the six sold out productions. We therefore conclude that the category free

tickets employees is not only used for the sales staff, since this department is relatively small and it implies that they would watch very many performances each per year. The total price leak in this category is just over 3 million NOK. Other tickets given free or discounted to employees in productions with lower sales are not registered in this category.

Children

Consists of two categories. Children between the age 0-18 receives a 50% discount. In addition, school classes are offered tickets for 100 NOK per seat in all categories. This group is also included as children in our analysis. Children make up seven percent of the sample, making a total price leak of 2.7 million NOK.

Seniors

Consists of one category. Seniors make up 10% of the sample and receive a 20% discount. Total price leak for seniors is 1.5 million NOK.

Subscribers

The subscriber category consists of seven categories, where six of them are discounted. Subscribers who do not qualify for other discounts receive 20% discount on tickets, children and students have a higher discount rate. Subscribers can in addition purchase up to nine additional tickets with 20% discount for each production. Subscribers also receive other advantages. All of the subscribers can pick seats before the official sale start, and 61% of the subscribers have fixed-seats in the auditorium. Other advantages include rehearsal invitation, discount in gift shop, free tours and some complimentary food when dining in the restaurants. Subscribers and their guests make up 15% of the sample making the total discount about 2.3 million NOK.

Students

Students consists of one category only and are given a 50% discount on all tickets in category A-D. In our sample, students make up 7% of the ballet audience and 4% of the opera audience. The total price leak is close to 2 million NOK, about 2.6% of the potential total income.

Free Tickets

The free tickets category consists of 10 minor categories where all are marked with free tickets and an explanation of the type of free ticket. Remark that the free tickets for employees were elaborated and grouped with the employee discount. About 2% of all tickets are given away externally for free. Most of these are invited guests. Free tickets are also given to the press, to teachers accompanying school classes, and as replacements for unhappy customers. 80% of the free tickets are given in category A.

OBOS

OBOS discount only consists of one category. OBOS- Oslo Bolig - og Sparelag is the largest housing and real estate developer in Norway [Åge Pettersen, 2017]. OBOS-members are given a 20% discount, and can buy two tickets for each show. We know very little about the demographics of this group. However, in 2016 OBOS had more than 415 000 members where approximately 270 000 of them were residents of Oslo and Akershus [Åge Pettersen, 2017]. The population in these areas 01.01.2016 was approximately 1 250 000. In other words, more than 21% of the local population has access to this discount. With a low membership fee in OBOS and a generous discount, one only needs to purchase two tickets per year in order for a membership to be profitable. In this sample 17 000 tickets are sold with this discount, making a leak of 1.9 million NOK.

Groups

This category consists of two ticket categories. Groups of 10-19 people receives 10% discount, while groups of 20 or more receives 20% discount. The discount is for all seats in section A-D., and can not be combined with other discounts. Groups make up 7% of the visitors.

Promotions

The category consists of 7 different ticket categories. Four of the productions in our dataset have free capacity. In these four productions we find these seven categories that does not exist in the other productions. These are special offers given to visitors, sponsors, newsletter receivers, or employees. The categories are only on sale quite close to the performance date. We therefore interpret these categories as promotions to fill up the empty seats.

NTO-card

This consists of one category. Members of the Association of Norwegian Theatres and Orchestra (NTO) receive a membership card known as ”Scenekortet” [NTO, 2016]. In order to be a member, one has to be employed at one of the 46 member organizations, all of which are within the performing arts field. The card authorizes the cardholder to buy two discounted tickets for each production at 32 performing arts institutions. At DNO&B this discount is 50%. We do not know how many members NTO has in total, but 1828 discounted tickets has been sold, which make up 1.5% of the tickets and just over half a million NOK discount in this sample.

Sponsor Discounts

This category consists of three different ticket categories. Some or all of the sponsors gets discounted tickets. These are less than 3% of the customers in this sample, and discounts are worth a little less than half a million NOK.

Other Discounts

This category consists of nine different categories, with low usage. We will therefore not explain this in further detail, as they only add up to 0.4% of the price leak. Most of these tickets are related to the operas youth initiative.

4.3.1 Total Opportunity Cost

As seen in Table 7, most of the productions have a very high cover ratio, with 6 out of 10 being sold out. The normal price category generally accounts for less than one third of the sales. At the lowest, the full price tickets only count for 13% of the ticket sale of the production which can be seen in detail in Table 7.

Discounts are the rule rather than the exception as more than 72% of the tickets sold are being discounted. The total price leak in this sample is 18 million NOK, 25% of the potential sales income from these tickets. The calculation is based on tickets that are purchased, leaving the unused capacity out of the equation.

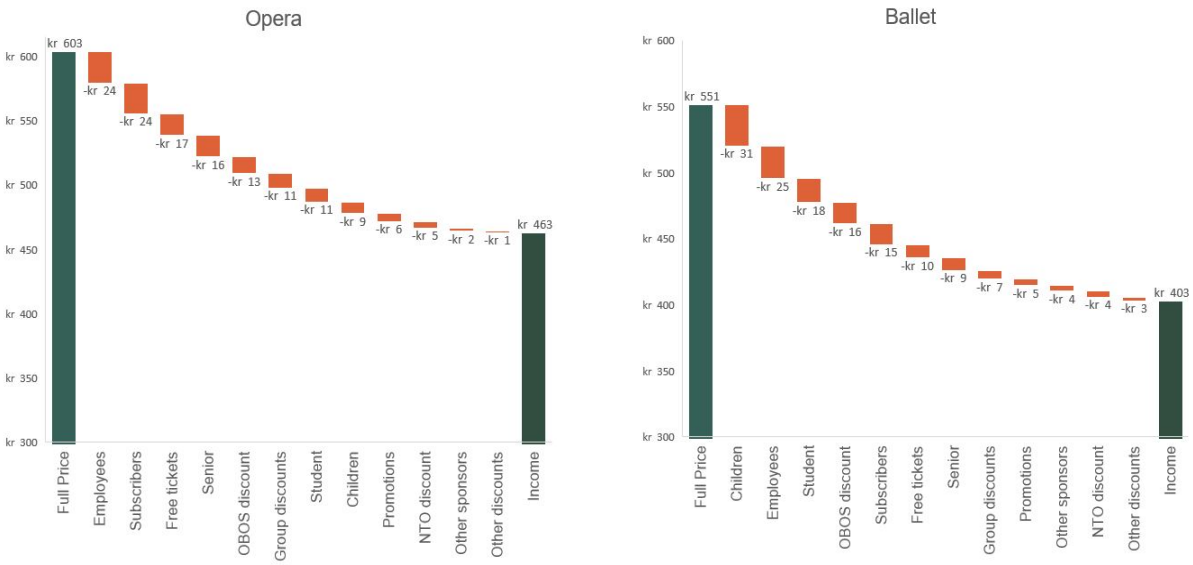
OPPORTUNITY COST OF DISCOUNTS			
Undiscounted income on sold tickets	kr	72 482 849	100 %
Employees	-kr	3 078 755	-4,2 %
Children	-kr	2 769 062	-3,8 %
Subscribers	-kr	2 338 969	-3,2 %
OBOS discount	-kr	1 912 508	-2,6 %
Student	-kr	1 889 627	-2,6 %
Free tickets	-kr	1 619 800	-2,2 %
Senior	-kr	1 522 795	-2,1 %
Group discounts	-kr	1 061 466	-1,5 %
Promotions	-kr	682 968	-0,9 %
NTO discount	-kr	566 372	-0,8 %
Other sponsor discounts	-kr	452 464	-0,6 %
Other discounts	-kr	273 859	-0,4 %
Total Discount	-kr	18 168 645	25,1 %

Table 8: Lost income due to discounts

Table 8 reveals that the biggest cost item in terms of discounts are the employees. Children is the second largest influence. It is important to note that 1.75 million NOK of this discount are given on The Nutcracker. Apart from this the children discount generally have a quite small effect.

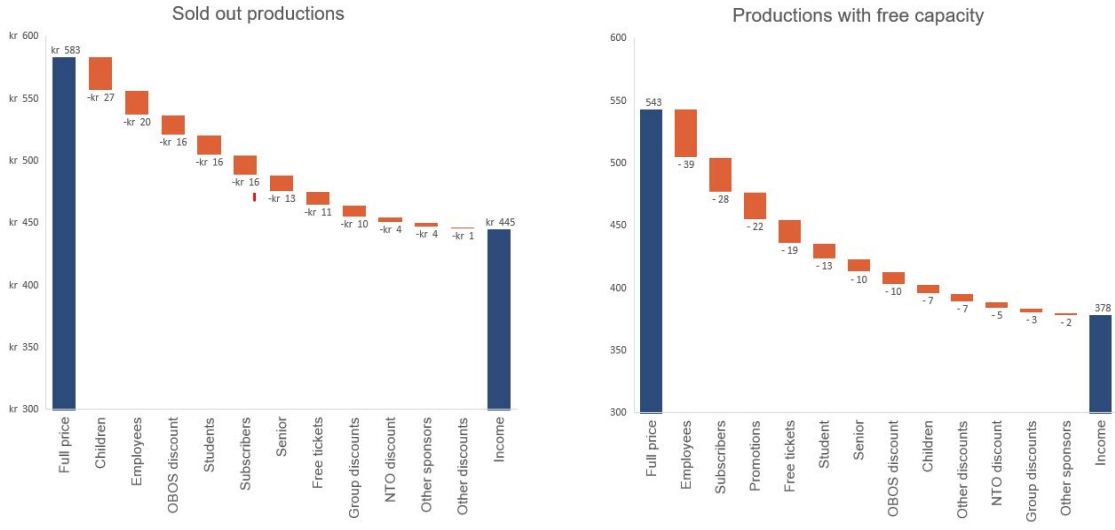
Further on, in the graphs shown in Figure 6 and 7 we can see how the discounts are distributed along different customer segments, and how each of these affects the total average price. The

graphs are based on the actual sales of all the discounted tickets (Category A-D), which means unused capacity will not affect prices. When separating into ballet and opera, we see a significant difference in the children discount, which is a lot higher on ballet. This is due to the major impact of The Nutcracker which has 20 performances in total, 33% of the total ballet performances in our sample. Otherwise, the discounts behave similar when comparing opera and ballet performances.



(a) Opera (b) Ballet

Figure 6: Distribution and impact of discount schemes on average achieved price



(a) Sold out (b) Free capacity

Figure 7: Distribution and impact of discount schemes in sold out and non sold out productions

It is also interesting to compare the discount distribution on the productions that are sold out to the productions with free capacity in Figure 7. There is a clear difference between the price leak on sold out productions and productions with free capacity. The difference is quite significant between these productions. The average price is 22% lower in the productions with free capacity. This is mainly due to two factors. First, more free and discounted tickets are given to employees. Second, for some of these shows there have been promotion campaigns with discounts towards the general audience. As a natural result of low sales, the subscriber discount reduces the average price more in these productions than in the sold out productions.

4.4 Distribution of Customers by Venue Sections

It is important to know which seats consumers choose when they buy tickets. If prices were equal throughout the whole venue, it would be reasonable to assume that the best seats were always chosen first. However, as prices are diversified, certain spots might be considered better value for less money and be preferred over the best audio-visual spots. Financially, it makes a difference if the fully paying customers are seated in category A or in section E-O where discounts are not used.

As price category A covers several different sections of the venue, we now divide this category into more specified sections to better approximate the popularity of different seats. The overall picture is presented in Figure 8.

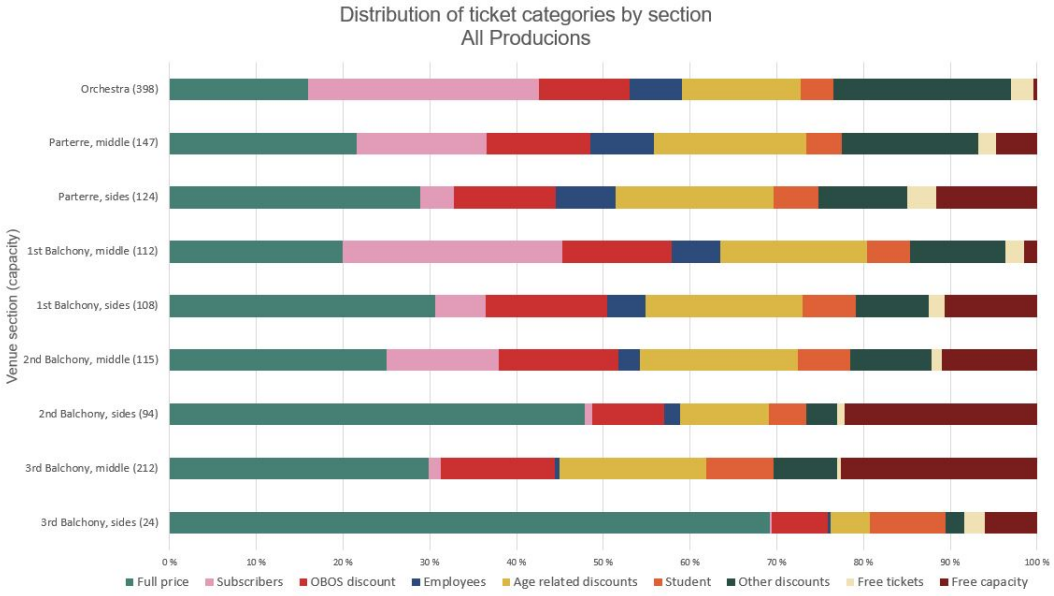


Figure 8: Customer groups in different sections

Two interesting things can be seen in this figure. First of all, the orchestra, middle parterre and the middle section on the 1st balcony are nearly completely sold out, even when including the productions with lower sales. In our sample, only 146 tickets are available in the orchestra, and 169 tickets in the mid section on 1st balcony. In other words, some seats in category A are clearly more popular than other spots.

Figure 9: Discount distribution by price category

The second is that these three categories are also the ones with the smallest degree of fully paying customers. This means that the most popular spots on average generate less income than the less popular spots. Figure 9 shows a simplified distribution between full price, discounts and free capacity among the different price categories.

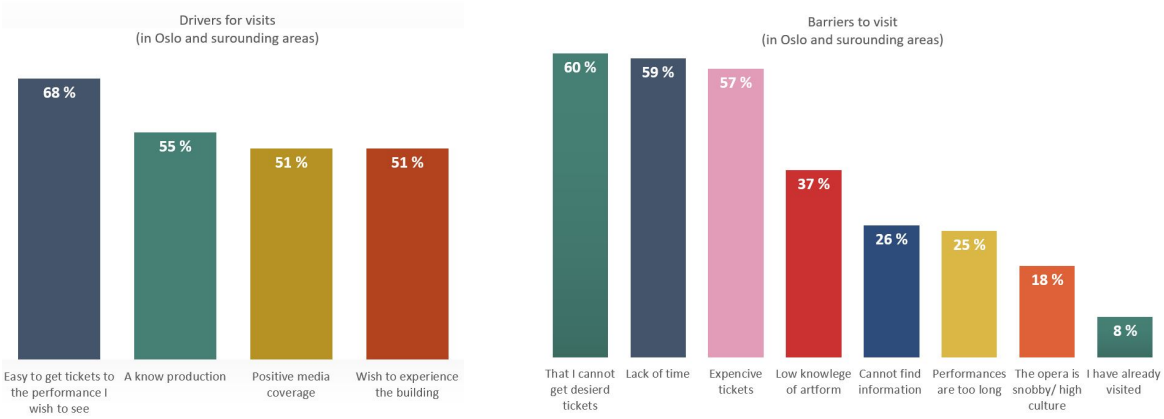
4.5 Findings from DNO&B's Market Research

QUESTIONNAIRE SELECTION BRAND REPORT DNO&B 2016	
Total selection	1040
Geographic distribution	
Oslo	331
Akershus	263
Outside Oslo & Akershus	446
Men	50 %
Women	50 %
Average age	47,1
Education level	
Primary school	5 %
High school	30 %
University	66 %

Table 9: Demographics of participants in brand report survey 2016

In addition to the sales logs, we also received a summary of the results from a survey that was held right after the 2015/2016 season. A questionnaire were answered by 1040 people. An overview of the respondents can be seen in Table 9.

We find several elements of this report especially interesting for our research question. The first being the question is *"How important would you rate the following factors in order to see or consider to see a performance in the Opera?"* Of all the things rated important (5-7 on a 7 point scale) the four most important are shown in Figure 10 (a). The most important drivers for visits are easy access to tickets, a known production, positive media coverage of the performance and a desire to experience the building.



(a) Drivers

(b) Barriers

Figure 10: The most important drivers and barriers for visits

The second interesting question is regarding barriers. *"To what extent affects the following factors that you may choose not to see a performance in the Opera?"* This is shown in Figure 10 (b). The most important barrier with 60% of the selection, states that the reason they choose not to go is because tickets are unavailable to the production that they want to see. The second most important barrier is the lack of time or the respondents' choice to prioritize other leisure activities. The third most important reason is because it is expensive to visit the opera.

Selection	Estimated price	
Average total sample	kr	524,02
Seen one show	kr	487,52
Seen several shows	kr	481,37
Have never visited	kr	611,36

Table 10: Estimation of price among customer groups

The respondents were also asked to guess what a visit to a performance would cost. A few of the estimations are shown in Table 10. People who have never visited believe tickets are more expensive than those who have visited the opera believe. The question does not specify if it is an average price or if it includes the cheapest tickets with limited view or standing-room. However, all guesses are above the true average ticket price, and significantly over the most reasonable ticket categories.

The respondents were also asked *"Which of the following art forms would you like to see in the opera?"* 57% stated that they would like to see opera, and 45% stated that they would like to see ballet. This means nearly half of the sample population is not interested in watching the art forms we analyze, and that opera is more popular than ballet.

4.6 Demand for Tickets in Secondary Markets

The biggest classified advertisement website in Norway is finn.no. On this site you can buy and sell all kinds of things, including tickets. According to finn.no they had 67 active advertisements with people marking their ad in the tickets wanted section with "Tickets to the Nutcracker" between October and December 2016. We have also found ads were people specify that they would be willing to pay double the list price, just to make sure to get tickets [Appendix H]. Looking at the sold out performances in our sample, The Magic Flute resulted in 23 ads on finn.no, A Swan Lake 17 ads, and La Traviata resulting in 1 ad [Appendix H]. We assume that most ads contain at least two tickets and more, since people rarely visit the opera alone. The numbers might be quite small in total, but we assume most people do not place an ad if they do not find desired tickets online. Therefore, this confirms that the demand exceeds supply for some of the productions that has been sold out, and that the willingness to pay exceeds the price level in the opera house. To make a simple test we made a sales ad on finn.no with two full price tickets for sale to the Nutcracker in December 2017. Within six minutes we got three responses of people asking for the tickets [Appendix H]. This indicates extremely high ticket demand, when you can get an extremely quick response on this website. Finn.no reminds sellers of tickets that it is illegal to sell tickes over the original ticket price, therefore it is difficult to track down the secondary market price in official channels in Norway.

4.7 Summary: Necessary and Possible to Change Price Strategy

In this section we will summarize the listed arguments and identify the opportunity for DNO&B to reduce their earnings gap and improve their financial autonomy.

We have found that DNO&B is under a lot of pressure from both media and the government to improve their financial situation. Even if the opera house and the Ministry of Culture are happy with the current financial situation, this and other performance venues may end up in a situation where the institutions are forced to make changes. The state subsidies received in the last years are at risk of being reduced. The Norwegian economy seems to be changing as we can no longer count on large revenue from oil, and the Norwegian pension costs are increasing. By looking at institutions that have had their financing reduced like Opera de Paris, increasing self-sufficiency is hard, but possible. Abrupt cost cutting seems to have negative effects on artistic quality. DNO&B states that sacrificing quality is important to avoid. In accordance with the increasing costs in the industry, the opera house should be motivated to prepare themselves to the best extent possible.

The ticket prices in DNO&B is low compared to opera houses in other countries. Especially when considering the average wealth levels of the Norwegian population. Literature shows us that the price elasticity in the performing arts industry is quite low. Studies shows that most consumers of performing arts are people with high levels of education, most with high salaries. We find the same pattern for the Norwegian audience at SSB and in the market research report DNO&B conducted in 2015.

DNO&B has prices similar to their competitors in Oslo. Considering that the operating budget is larger than their competitors, and they are placed in a landmark building, there is reason to believe that they can go for the premium price position and differentiate from the competitors. Additionally, the customers seem to believe that the price level is higher than it actually is, especially for users who have never visited. This group believes that the price is 511 NOK more than the cheapest available ticket. This indicates that the general public are having a reference price which is not in accordance with the actual price level. This allows for the opera to place less emphasis on price as a barrier for visits.

Last but not least, there is significant evidence that they are losing profits since they are selling out their capacity on certain productions very fast. Even in the productions that have lower seat coverage, most of the best seats are sold. The diagnosis have shown us that the average price is quite low, compared with the list price, due to a quite extensive use of discounts. There is definitely demand in a secondary market, which should make it clear that the potential for revising pricing scheme and thereby increasing self-sufficiency is present.

5 Analysis

We will now analyze different aspects in DNO&B to exploit the potential to increase revenue. The overall goal with the state grant DNO&B receives is to make sure that everyone can access art and culture. It is also a requirement that all recipients of state aid for cultural purposes should exploit their revenue potential. The first goal holds a strong argument to keep the visitor numbers and the seat coverage high, which so far has been very successful. The last argument requires more emphasis on total revenue. It is important to respect both goals, as both are requirements for receiving state grants in the first place. In the grant letter that accompanies the annual subsidies it is specifically stated that the Ministry of Culture requires that all lost equity must be restored within a year, unless it is caused by the changes in pension liabilities alone. The Ministry of Culture requires that the institutions take the necessary measures to balance incomes and costs, including pension liabilities [Appendix A]. Having this in mind, a clear financial goal is to cover the deficit to help re-balance the equity which is currently -111 million NOK.

In Section 5.1, we use the sales log to investigate demand for different seat locations by looking at what time the consumers buy the different seats. Then, in Section 5.2 we make a cost-benefit analysis of the current discount scheme. Section 5.3 shows an example of the cost of discount at some of the bests seats. In Section 5.4 we examine other aspects of pricing strategy that can help increase the earned income, price level of opera versus ballet and how prices should be better adjusted for cpi and demand. Based on the findings from these four sections, we suggest a new pricing strategy in Section 5.5. We present a new seat map with rearrangements in the price categories and changes to the discount scheme. In Section 5.6 we estimate how much this will increase revenue, given the price elasticities found in our literature review. Lastly in section 5.7 we briefly discuss ways to increase income from revenue items besides tickets.

5.1 Development of Sales During the Season

To get a better understanding of demand and consumer behaviour we have made an analysis of the month by month sales for each price category. This way we find how big the demand is, and whether it differs between the different categories.

We find that the purchasing pattern is quite similar in the productions in our data. The sales period can roughly be divided into three periods; presale before tickets are on the open market, an intermediate period with low sales, and peak season with high sales. In the presale season, between 18 and 40% of the category A tickets are sold. A total of 16 078 tickets are sold in this period, making an average of 158 seats pr show, which is 12% of the seat capacity. 92% of these tickets are subscription tickets, as this is the only group who has access to the presale, in addition to selected others. After the presale, there comes an intermediate period with quite slow sale in June and July. As all programs have been released in the late spring in the recent years, we cannot know if this is an effect of the summer itself. In the summer months the activity on the main stage is lower. The general public also might spend less time planning for future leisure activities during the summer. For productions that run in the fall, the sale increases rapidly from August. For productions that run in the winter and spring, the sale usually increases rapidly from November. Up to the point where sales start to increase rapidly, each performance night has on average sold 406 tickets which is 30% of total seat capacity. In the last few weeks before performance date, sales slow down as shows are sold out and availability is lower. What happens after the performances are sold out is uncertain, as the opera house does not register demand after this point. What we do now is that Section 4.5 and 4.6 proves that there is excess demand for tickets on sold out productions, and the audience themselves reports that they are not attending performances because they do not get the desired tickets. This is similar to the concept of dilution from RM, when tickets are allocated to a lower price category when you could in fact have achieved higher prices for them. It would be interesting to estimate the size of excess demand by registering this on the ticket purchase site and at the ticket office. Further on, we will present the results from the data we do have.

The results can be seen in Figure 11 and 12. The blue line shows the total capacity usage. The colored lines represents the different price categories. The darker the color, the more expensive the ticket. Figure 11 displays two operas and two ballets where capacity is fully or almost fully utilized, Figure 12 displays one opera and one ballet that has free capacity.

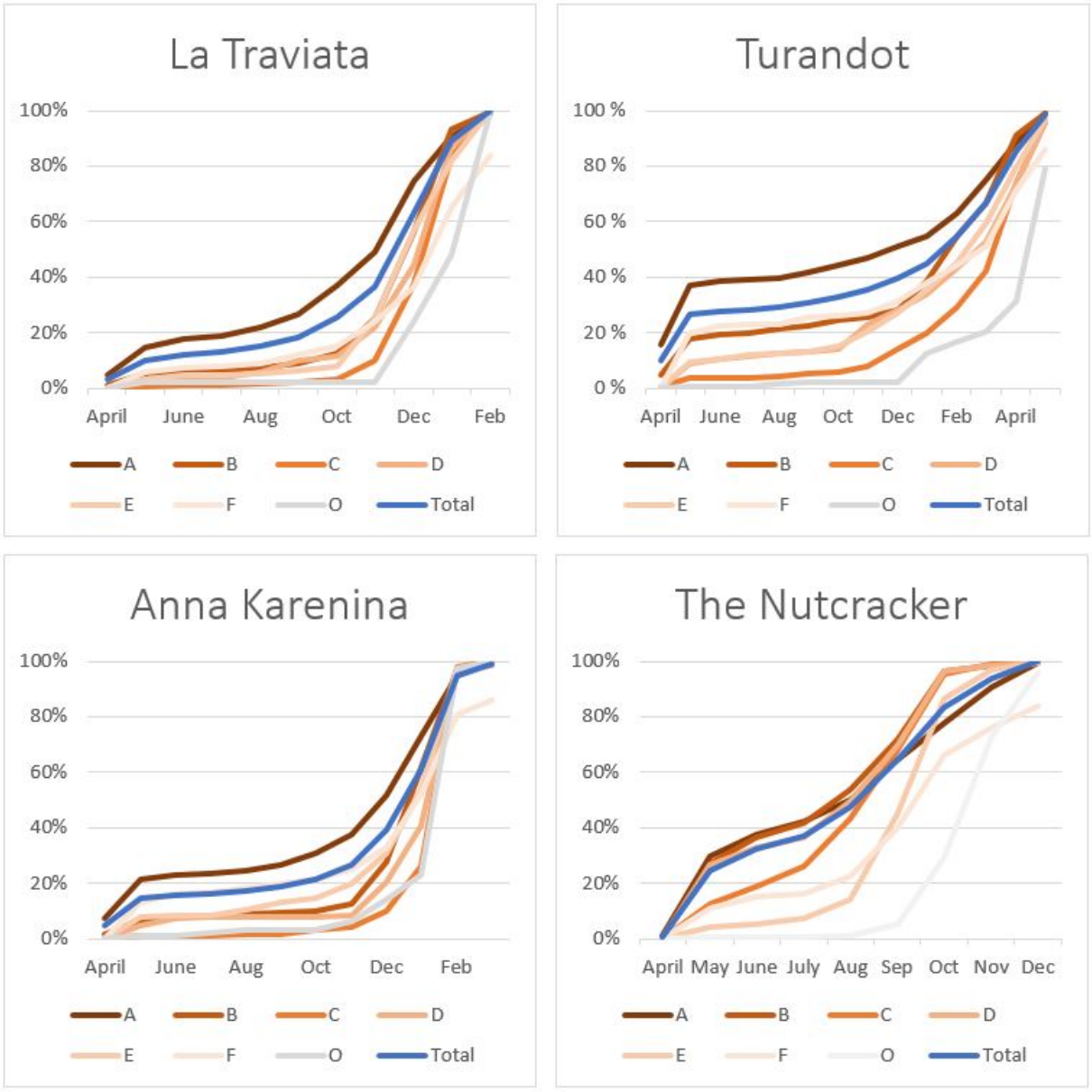


Figure 11: Sales date by price category in four sold out productions

In general, we can clearly read from these graphs that the most expensive tickets with the best seats are also the most sought after. Category A tickets generally dominates the sale, especially in the beginning. In the productions that have free capacity, category A still sells very well compared to category B-O. This confirms the pattern Labaronne and Slembeck [2015] recently found in Swiss theatres, namely that a big part of the price insensitive segment have low commitment cost. They purchase tickets early in order to get the best selection. This is opposite of the common behaviour in the industries where dynamic pricing is widely used, like the airline and travel industry. A pricing strategy where the prices increase towards the performance night might work against the purpose of adding revenue.

When it comes to the productions that have unsold tickets, shown in Figure 12, we find that most of the free capacity is in category C. Category C is the second largest category, several times larger than D, E and F, and a bit bigger than category B. Category C is found in the part of the venue where seats are furthest away from the stage. This evicence confirms the research that shows the importance of quality when the audience members pick a seat location. As category C contains more seats, it is hard to say for certain whether the price is the reason why this category is less popular than the cheapest categories. But the pattern of C being less popular is evident in all productions. We will not elaborate on this, but recommend to explore this segment to find out if the pricing scheme is set disproportional.

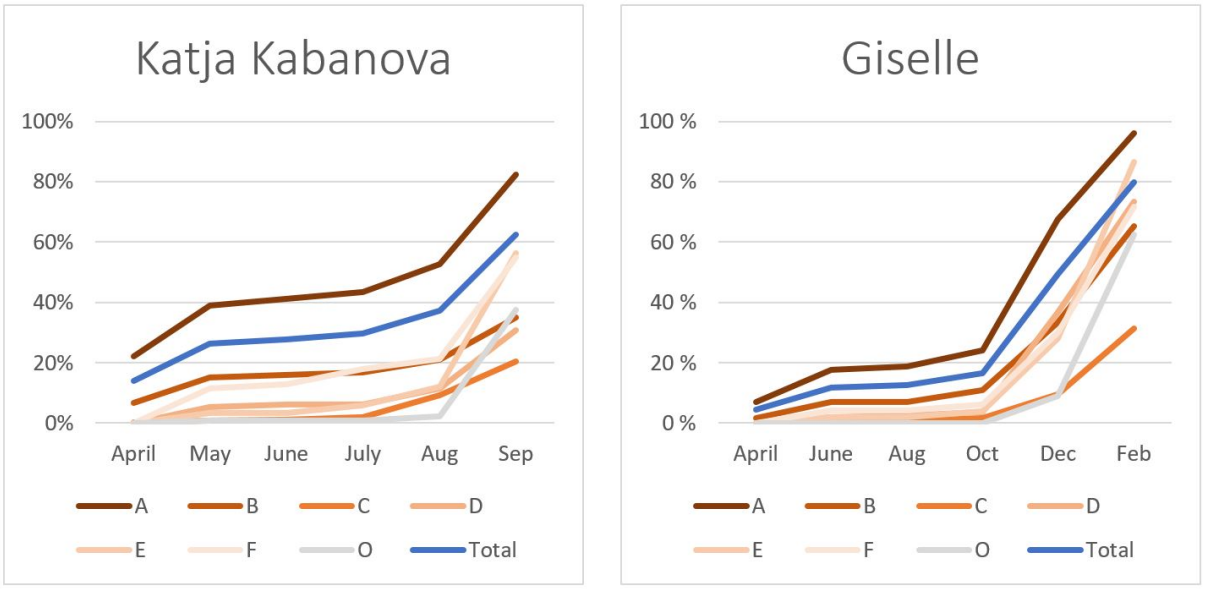


Figure 12: Sales date by price category in two productions with free capacity

The Nutcracker displays a slightly different trend, where B and C also sell well. We also see in this production that the average purchase consist of more tickets per purchase than what we find in the other productions. This could indicate that when the total cost per household goes up, the consumers become more sensitive to price.

The purchase pattern we find in this analysis makes it understandable that the audience polled in the market survey fines that they do not get the seats they want when looking for tickets. More tickets in the best sections should be available longer, and not sold in the presale period. This way more customers will pay full price for the best sections, and the average price will increase.

5.2 Cost-benefit Analysis of Discounts

> *When giving your customers a discount, you have to make sure you get something in return*
> - Tommy Arvinell.

In this section we will go through the discounts and make a cost-benefit analysis of the ones that represents the biggest price leak in our dataset. In Figure 8 in Section 4.3.1 we saw that the discounts represents a total opportunity cost of 18.2 million NOK in our dataset. The categories which represents the biggest price leaks accumulated are employee discounts, subscribers, age related discounts, OBOS discount, student discount, free tickets and group discounts. Therefore we will elaborate on these discounts further on in this section. The rest of the discounts represents smaller price leaks and will therefore only be commented briefly. The use of discounts represents both 2nd and 3rd degree price discrimination. The group and subscriber discounts represents 2nd degree price discrimination, as the price per ticket goes down with higher quantity. 3rd degree price discrimination are discounts that differentiates on different segments and can help ensuring availability for segments with different socioeconomic status or willingness to pay. Discounts should only be used when discounts makes the provider benefit somehow.

5.2.1 Employee Discounts

The employee discount generates the greatest opportunity cost in our sample, with more than 3 million NOK on ten productions. Of the 6123 tickets in this category, 3986 are discounted tickets with a generous average discount on 68% and 2137 are free tickets. This was elaborated in Section 4.3.

This discount is mainly used by staff, as the name implies. Some tickets are free tickets as a component of employee contracts, for artistic reviews and for relevant people attending who work with a production. The sales department and box office are required to have knowledge about the productions they sell, and should therefore attend all new productions. Other parts of staff use these tickets to build competence on repertoire and performers. Also within this category are tickets used for the representation and reception of guests and contacts, as well as internal and visiting production teams. As of now, the portion of tickets provided to sales personnel as working hours and as leisure activity is not specified.

An interesting feature of the discount is that it does not have to be used by the employee, but can be given away. This feature is perhaps beyond what is normal when it comes to employee benefits, and should be reconsidered if this use is of high frequency. By giving away highly discounted tickets, one risks to cannibalize the market.

Among the free employee tickets, about 50% of these are registered within the week before the performance, and 18% within the last day. This indicates that the free tickets not necessarily compromises sale. However, one could argue that free tickets to employees should be the last option when there is free capacity. Even though pattern found in the travel industry regarding price sensitivity and commitment cost is not very evident in the art sector, it is reasonable to assume that many art consumers could choose to visit on impulse. Free tickets that are given away a week in advance, could potentially be sold at full or discounted price. In addition, free capacity and zero marginal cost could potentially be a good opportunity to reach out to a wider audience and target new customers and potential sponsors.

The arrangement at this point appears as unprofitable generous. It can also be perceived as unfair to the customers who can not get a ticket. When the largest barrier to visit is reported as the difficulty in getting the desired tickets, it seems wrong to fill up more than 4.5 full venues out of 102 in total with employee benefits. Especially since 85% of these tickets are found in category A, the most desirable category. These numbers seem to be in conflict with the goal of being Norway's opera house, since these tickets are excluded for the open public.

Suggested Change To ensure that all parties will be satisfied with this arrangement, some adjustments should be made. If free tickets shall be given away to employees, it should only be at the very last minute. Discounted tickets should not be sold before the official sales start, so that the best audio-visual seats are available to fully paying customers. Employee tickets as work hours should be considered more carefully. Perhaps the function carried out on visits could be executed at another time, such as during exercise or dress rehearsal. In some functions, a ticket in a lower price category can make the same value as in the highest price range. The number of free tickets should be reduced as much as possible. Let the staff watch rehearsals instead of using tickets on the performance night if possible. One should also start to collect data about how many tickets are resold or given away to others in this category. In the further calculations, a total reduction of 20 % is used in this category. Reduce the employee discount to 30 % in category A, and 50 % category B-D. This incentivizes the staff to buy the less popular tickets, but still gives them generous discounts.

5.2.2 Subscribers

The subscribers discount is in total 2.3 million NOK and are being used on 15% of the tickets in this sample. The discount is 20% on all subscriptions except the one that only access premieres. Subscribers gives the organization financial stability and predictability. Having a strong, loyal customer base brings several positive aspects and opportunities for the organization. In 60% of the subscriptions, DNO&B chooses which productions that are part of the bundle. This way, the risk of not selling tickets to a production is reduced and it is easier to introduce new material because you are certain that you have the audience in place. Subscribers can be a valuable source of feedback, since they are visiting frequently.

Another positive aspect of the subscription packages is access to customer information which secures a fixed customer base. One does not have to spend resources on re-targeting customers more than once a year. Subscribers also have a marketing effect as a frequent visitor are more likely to help amplify the venue and production by word of mouth.

So how can having a loyal customer group be a problem? For one thing, having a large group of subscribers are in conflict with the mission of being Norway's opera house. If parts of the venue constantly are occupied with a certain group of people, there is less space for new visitors. The other potential problem is that the group who are subscribers are also the group who generally has the highest willingness to pay. If the people with the highest willingness to pay are discounted with as much as 20%, the organization looses a lot of money. This problem is highly amplified by the benefit that the subscribers receive: the possibility to reserve tickets before the official sale starts. The result as we showed is that the best seats of which people have the highest reservation price, are instead sold with a discount. Another aspect of this discount which seem unreasonable, is that the subscribers can buy up to nine additional 20% discounted tickets per performance.

Suggested Change The fact that the best seats are occupied early at a low rate can easily be avoided by putting restrictions on seats available for this group. We suggest that subscriptions to the most popular seats in category A does not have a discount. This is category A premium. In addition, subscribers should not be able to buy discounted tickets for other guests.

5.2.3 Age Related Discounts

Children up to 18 years old are given a 50% discount on all tickets in category A-D. The discount rate is on par with other competing cultural institutions in Oslo. Children are generally a quite

small part of the audience at DNO&B, so the price leak is relatively low, even though the discount is quite generous. The discount mainly manifest itself in *The Nutcracker*, which is a ballet with children both as actors and as target audience. Children are usually accompanied by parents or other fully paying customers, making them additional sales rather than losses. As we have seen earlier, there are indications of increased price elasticity when the total household cost increases. Being introduced to the art form as a child, can perhaps affect consumption later in life, which makes the discount a good investment.

When children are attending in connection with a school event, the discount is even larger. The policy is that the tickets costs 100 NOK per seat, regardless of price category. Making it easy for school classes to visit the opera house is an effective way of reaching out to a wide audience, and introducing new customers to the art form. The policy is highly in accordance with the vision of being Norway's opera house. The price, however, is perhaps lower than it should be. The discount is up to 86% in category A. The price has been unchanged since 2011. The inflation has been almost 12% in this period. Keeping this price further will result in a big loss over time.

The senior discount is 20% and the price leak on this discount is 1.5 million NOK in our sample. The senior discount is widely used in the cultural field and in society as a whole, and the 20% rate is on par with the competing institutions. On average the household economy of the senior population has had a positive development in the past decades. As seen in Figure 13, the senior population has by far the highest income growth since 1990. The total income level is still below average, but a study from 2013 done by Consumption Research Norway (SIFO) reveals that most Norwegian seniors feel they have a good or a very good economy [Lavik et al., 2014]. On average, they have less expenditures, less loan and more money in reserve than the rest of the population. It is therefore debatable if senior discount should be given in general. Making a change in this discount is difficult to execute for one institution alone without loosing customers. However, restricting or reducing this discount would probably not have much effect on senior's access to the venue.

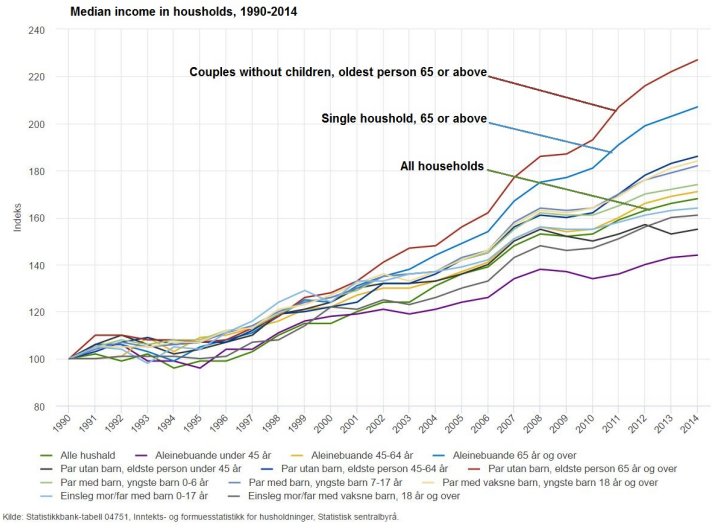


Figure 13

Suggested Change We suggest that the discount for children can be reduced to 20% in category A. Category B-D still continue with 50%. This is in accordance with their cultural political goals, and the competitors policy. The school class ticket should be increased. We suggest a new moderate price on 150 NOK for these tickets. For seniors, remove the discounts in category A, and keep 20% in category B-D.

5.2.4 Students

The price leak caused by the sudent discount is 1.9 million NOK in our sample. As multiple studies show [Seaman, 2006, Borgonovi, 2008], highly educated people make up a large part of the culture consumers. This trend is seen through time, different countries and different cultural institutions. Reaching out to this group early in life to make loyal consumers over time can therefore be a good investment. The behavior of students is different from other customer groups, as they to a greater degree choose tickets in the low price categories. This could indicate that they are low budget customers who cannot afford the top price categories even when receiving discounts and prefers low expense compared to good seat location. Still, 41% of the students purchase the most expensive tickets. At the same time, we see a different purchasing pattern when it comes to commitment costs. Students generally purchases tickets closer to the performance night. As we have seen, the availability of category A and B is very reduced as we approach the night of performance, which can also explain why there are less student tickets in these categories.

Suggested Change We suggest to reduce the student discount to 20% in category A. Keep 50% discount in category B-D.

5.2.5 OBOS

The OBOS discount gives a total price leak on 1.9 million NOK in our sample. This discount is 20% on tickets in category A-D. OBOS confirmed when we spoke to them that the financial support the opera receives is way less than what the total price leak this discount representes annually. However, since OBOS have a very high membership number, it is a great opportunity to reach out to parts of the population who is generally harder to reach. OBOS-members are a diverse group, and found all over the country [Åge Pettersen, 2017]. This makes the OBOS-discount an effective channel for reaching the goal of being Norway's opera house. The discount is promoted on their website and the OBOS-magazine which is distributed to all members nine times annually.

The discount is quite costly, with an average loss of 18 750NOK potential income per night. A membership fee in OBOS is now 200 NOK annually [Åge Pettersen, 2017]. This means one only have to purchase two category A tickets for the membership to be profitable. The discount therefore might have the opposite effect as well; instead of attracting new customers, people who would otherwise have payed full price takes advantage of this generous offer.

However, changing this discount might be hard. Most of the competing venues in Oslo also gives two tickets at 20% discount on all tickets. Even if DNO&B would manage to negotiate a smaller discount, this might remove the effect of finding new audience. If a member not familiar with opera and ballet seeks a cultural experience just by looking at the benefits supplied by the membership, this group might as well pick a venue with a larger discount. You might also risk a drop in sponsor income from OBOS if this deal is renegotiated. One option is to remove the guest discount, meaning not give discount to guests of the members. This change would probably not be perceived as unfair, as most 3rd degree price discrimination usually is only given to the person who is in a certain segment. In sum, this agreement does not seem to be in the opera house's favor financially, but the other benefits might make up for the income loss.

Suggested Change Keep the OBOS discount, but make it unavailable to use in category A.

5.2.6 Free Tickets

Most of the free tickets are invites to premiers, guests from other cultural institutions, official visits and to the press. We know little about this audience. However, the report filed by the Office of the Auditor General shows that the level of free tickets are at a low level when comparing with other state owned institutions for performing arts [Foss, 2015]. In the research done on the perception of quality and demand for performing arts [Seaman, 2006, Abbé-Decarroux, 1994], positive press reviews have a major effect on price elasticity and demand. Inviting press can therefore be an important investment. On average, 30 tickets has been given to the press per production, 70% of these to new productions. This number seem to be reasonable. On average, 68% of the free tickets are issued to the five new productions.

Suggested Change This discount is already mentioned in the employee discount section. A goal is to cut all free tickets by 20%.

5.2.7 Groups

The group discount is 10% and 20% in our sample depending on the group size. Notice that this is changed to 15% at the opera house as of fall 2017. The total price leak is a bit over 10 million NOK. Groups has the positive property of filling up space. When a show is assumed to be fully booked, group discount in general does not contribute positively. This customer group might add some value by attracting customers who possibly would not otherwise visit. The questions that needs to be answered is whether or not those customers would have bought the tickets needless of the discount, and whether or not the performance would otherwise be sold out. If the tickets would have been sold, the entire discount is opportunity cost. As we know nothing more about this group, the profitability is hard to evaluate.

Suggested Change Make this discount dynamic. Do not give group discount if the show is likely to sell out on its own. Reduce the discount to 10%.

5.2.8 Promotions, NTO-discount, Sponsor Discount and Other Discounts

The rest of the discounts, promotions NTO-discount, sponsor discounts and other discounts were elaborated in Section 4.3. All of these discounts represents a total price leak of a little under 2 million NOK. In general, all of these discounts are used wisely and they are not affecting revenues to a wide extent. Therefore we do not suggest any changes in these discounts.

A summary of all the suggested changes from this chapter in the use of discounts is displayed in Table 15.

5.3 Location of Discounted Seats

OPPORTUNITY COST ROW 1	ORCHESTRA	PARTERRE MIDDLE	1ST BALCHONY MIDDLE	2ND BALCHONY MIDDLE
Sold at full price	489	241	426	614
Sold at discounted price	2079	1913	2225	2246
Total opportunity cost	**kr 404 351**	**kr 393 206**	**kr 542 320**	**kr 359 370**
Subscribers	27 %	27 %	22 %	31 %
Employees	18 %	35 %	28 %	5 %
Children	12 %	8 %	9 %	17 %
OBOS discount	11 %	6 %	5 %	14 %
Free tickets	6 %	4 %	16 %	3 %
Senior	7 %	6 %	5 %	9 %
Student	6 %	4 %	6 %	11 %
Other categories	14 %	11 %	8 %	10 %

Table 11: The opportunity cost in row 1, middle section

As seen in Figure 8 and 9, the main reason why the income is so low despite the very high seat coverage is that such a high level of the best and most expensive seats are sold to customers with large discounts. The literature shows that demand for performing arts are relatively inelastic. Quality seems to be the most important factor in determination of willingness to pay, both when it comes to quality of the performance and the audio-visual quality of the seat. From the scarce literature on dynamic pricing in subsidized performing arts, it also seems that the customers who are least price sensitive are in fact the ones who arrive first in order to get the best selection. We find evidence in our dataset that people generally are more concerned about the location of the seat rather than the price. All in all, the price policy in DNO&B is very poorly designed when it comes to exploiting these contexts, as the best tickets are sold discounted. To illustrate, take a look at Table 11. Here is an overview of the first row in the four best sections, the orchestra and the middle sections in parterre, 1st balcony and 2nd balcony. In total, this adds up to 106 seats. If these seats had been sold at full price, the ticket income would increase by 1.7 million NOK on these 10 productions. This shows how one can increase revenue quite easily with minor adjustments, and without being much in conflict with the goal of being available.

Based on this insight, we suggest to differentiate category A so that the best seats are not available with discount. The new seatmap and categories will be presented in Section 5.5.

5.4 Pricing Scheme and Ticket Price Development

In addition to discounts, we have by studying annual reports found some issues regarding general price strategy that might help increase revenue if changed. We will start by reviewing the revenue attained on opera and ballet performances, where we find a price difference between opera and ballet for which we find no obvious reason. These have been adjusted through time only to a small

extent. Lastly we will discuss the opportunity to adjust prices dynamically according to demand.

In general we find that the average achieved price per ticket on the main stage for ballet performances is significantly lower than the corresponding price for opera performances. Both art forms are supposed to be equal in DNO&B. The number of performances by the different art forms are quite equal every year. In our dataset, four out of five operas have the highest price range, whereas only one out of five ballets have the highest price range. Keeping in mind that the sales numbers are approximately equal, this can be exploited further.

DEVELOPMENT OF TICKET REVENUE ON MAIN STAGE									
Year	2012		2013		2014		2015		2016
OPERA									
Achieved average price per ticket	kr	456	kr	400	kr	405	kr	442	kr 457
BALLET									
Achieved average price per ticket	kr	351	kr	343	kr	349	kr	362	kr 412
DIFFERENCE	**kr**	**105**	**kr**	**57**	**kr**	**56**	**kr**	**80**	**kr 45**
Total potential loss from lower price level on ballet period 2012-2016 kr 34 157 665									

Table 12: Development of achieved ticket revenue on opera and ballet performances.

In Table 12 we find the achieved average price per ticket on opera and ballet performances on the main stage in the period 2012-2016 with nominal prices [Appendix G]. Assuming that it would have been possible to achieve a similar average price on ballet performances, as on opera performances, the total loss for these 5 years is 34 M NOK.

On opera performances, there was a significant price drop in the average ticket price between 2012 and 2013, from 456 NOK to 400 NOK per ticket. The official annual reports shows that the price was identical in 2012 and 2016 with 456 NOK and 457 NOK as achieved average price per ticket. The ballet performances have had a similar development with a decrease in 2013 and 2014 compared to 2012 levels. However, the price level on ballet performances had a drastic change in 2016. It seems that the opera house has made some adjustments which has worked very well. Still, there is a significant difference from the price level on opera performances.

The development of sales shows no significant pattern separating opera and ballet. In general, it is the lowest priced seats that are unsold on performances with available capacity, as seen in Table 9. Giselle with a total seat coverage of 79% had a seat coverage of 96% in category A. Manon, also with a seat coverage of 79%, had a seat coverage in category A of 92%. This indicates that the demand for category A is still high on performances with available capacity. As Felton found when studying elasticities, price elasticities can be positive, possibly explained by price being perceived as a measurement of quality. This is in accordance with pricing theory that also

states that prices may give a strong indicator of quality. The opera house should therefore not price the art forms unequally, as it can indicate that ballet has a lower quality than opera. The price level should be equal unless the demand is different. The market research indicates that ballet is slightly less popular than opera, as 57% would like to see an opera in DNO&B whilst 45% a ballet. A completely equal price level might therefore might be optimistic, but it should certainly be the rule rather than the exception.

PRICE DEVELOPMENT ADJUSTED FOR CPI										
Year	2012		2013		2014		2015		2016	
CPI Culture and leisure	90,8		94,1		97,1		100		106,5	
OPERA										
Achieved average price per ticket	kr	456	kr	400	kr	405	kr	442	kr	457
CPI adjusted price from 2012	kr	456	kr	473	kr	488	kr	502	kr	502
Total loss	kr	-	kr	8 277 278	kr	8 147 852	kr	6 685 564	kr	6 685 564
BALLET										
Achieved average price per ticket	kr	351	kr	343	kr	349	kr	362	kr	412
CPI adjusted price from 2012	kr	351	kr	364	kr	375	kr	387	kr	412
Total loss	kr	-	kr	1 825 647	kr	3 066 760	kr	2 567 834	kr	-
Total potential loss from not adjusting prices after CPI since 2015 kr 37 256 499										

Table 13: Development of achieved ticket revenue on opera and ballet performances.

Table 13 displays cpi adjusted prices from 2012 to 2016. The prices of opera have not moved from 2012 to 2016, while a natural price increase following the cpi of culture would have resulted in a price of 502 NOK in 2016. On ballet performances, they have achieved this when originating from 2012 prices. The total loss for just not adjusting prices from 2012 to 2016 is 37 M NOK. It seems to be room for being more dynamic in the pricing strategies and adjust prices according to inflation.

Looking at some historical numbers, it seems that previous demand has not been important when setting price. This is demonstrated in Table 14. La Traviata, The Magic Flute and Romeo and Juliet have all achieved very high seat coverage in their first presented year in the table. Still, the price level has not been challenged when having reruns of the production later. It seems odd to not challenge the price level when the seat coverage has been so high. High coverage indicates that the production was popular, and one could also expect that this can lead to positive external network effects when people recommend it. The ballet version of Romeo and Juliet was set up in 2014 with 99 % total sale with a max price of 645. It reran in 2015 with four performances, with the same price, reaching a seat coverage ratio of 102 %. DNO&B should therefore consider higher prices when demand is expected to be high, for example with popular reruns. They should make some clear criteria reviewing the total sales, sales in category A, media coverage and the old price when setting a new price for a production.

PRICE DEVELOPMENT ADJUSTED & UNADJUSTED FOR DEMAND				
Performance	2014	2015	2016	2017/2018
PRODUCTIONS WITH PRICE INCREASE				
The Barber of Seville	96 %	95 %	Not listed	Listed with price increase
The Nutcracker	101 %	100 %	100 %	Listed without price increase
PRODUCTIONS WITHOUT PRICE INCREASE				
The Magic Flute	Not listed	101 %	100 %	Listed without price increase
Romeo and Juliet	99 %	102 %	Not listed	Not listed
La Traviata	Not listed	101 %	Not listed	Listed without price increase

Table 14: Seat coverage development in selected productions between 2014 and current season, with and without adjustment in ticket price.

Suggested Change Equalize the price level on opera and ballet. Pay more attention to achieved seat coverage and average price when programming reruns of productions. If the the show was popular and sold out, raise the price of the rerun.

5.5 Proposal New Pricing Strategy

Based on the findings from the previous sections, the new pricing strategy has changes in four elements; changes in the discounts, restrictions on where to use discounts, a general price increase in category A, and a more economically differentiated category A. The changes are summarized in Table 15.

A common feature in many of the discounts is that big parts of the customer group would probably be willing to pay more. However, by removing the discount, another part of the group would probably be excluded as the price would exceed their willingness to pay. It is therefore very hard to remove discounts if one wishes to reach out to the whole population. Instead of removing discounts completely, we suggest some restrictions on where to use them. A summary of suggested changes can be found in Table 15.

As seen in Table 15 and on the new seat map in Figure 14 we have divided category A into Premium, A+ and A. A big portion of the best seats are now occupied by people with high discounts. We suggest to differentiate more in category A. This category counts for 59% of the seat map, and the audio-visual quality of these seats are quite unequal. Because of this, we have created a new venue plan where we introduce a new category, *Premium*, which includes the most popular seats. In this price category, no discounts can be used. Anyone who wants to purchase these seats must pay full

SUGGESTED CHANGES IN PRICE REGIME			
NEW SEAT MAP			
Diversify price category A into Premium, A+ and A			
GENERAL DISCOUNT RESTRICTIONS			
Introduce new category premium, for 169 of the most popular seats. No discounts can be used in this section. Subscibers can still subscribe in this category, but without discount.			
GENERAL PRICE INCREASE			
Category B-O	No change		
A	645 NOK and lower increase to 695 NOK, 695-795 NOK increase to 795 NOK		
A+	Increase to 795 and 875 NOK		
Premium	Increase to 875 and 975 NOK		
DISCOUNTS	TODAY		NEW
Employee	70 %		20 % A In category, 50% B-D
OBOS	20 %		No discount in category A
Children	50 %		Reduce discount to 20% in category A
Senior	20 %		No discount in category A
Groups	10 and 20 %		Reduce discount to 10%
Subscirbers	20 %		No discount on supplementary tickets
Students	50 %		Reduce to 20% in category A
Free tickets	100 %		Reduce the usage of free tickets by 20%

Table 15: Overview of suggested change in pricing

price. The new seat map is developed based on the consumers purchasing pattern in our dataset. By analyzing time of purchase, we have identified the seats that aggregated are sold longest time in advance of the performance night. The premium category in the orchestra is on average sold out more than 150 days before the night of performance, indicating a very high demand. We also find the pattern that row one on the balconies, are more popular than the last row on the former balcony/parterre/orchestra. This indicates that these seats are more popular, and should be priced at the same level as last row in the former section. The new seat map can be seen in Figure 14.

As the literature suggests, customers generally are not particularly price sensitive. Also, we find that prices have not been adjusted for inflation in the recent years. Therefore, in our new price plan the whole orchestra section has increased in price. Tickets that used to be 645 and lower have been increased to 695 in category A, 795 in A+ and 875 in premium. Performances with prices ranging from 695-795 are increased to 795 in category A, 875 in A+ and 975 in the premium category. We have kept the maximum price below 1000 NOK as that is a price barrier to cross. However, the opera should cross that price barrier, if implementing the new prices leads to small changes in the

seat coverage. In order to make sure the opera house is not exclusively available only to people with high income, no changes are made to the other price categories. This way we have balanced between increased profits on the high demand seats, and made sure there are enough seats left for those who want to continue using a discount.

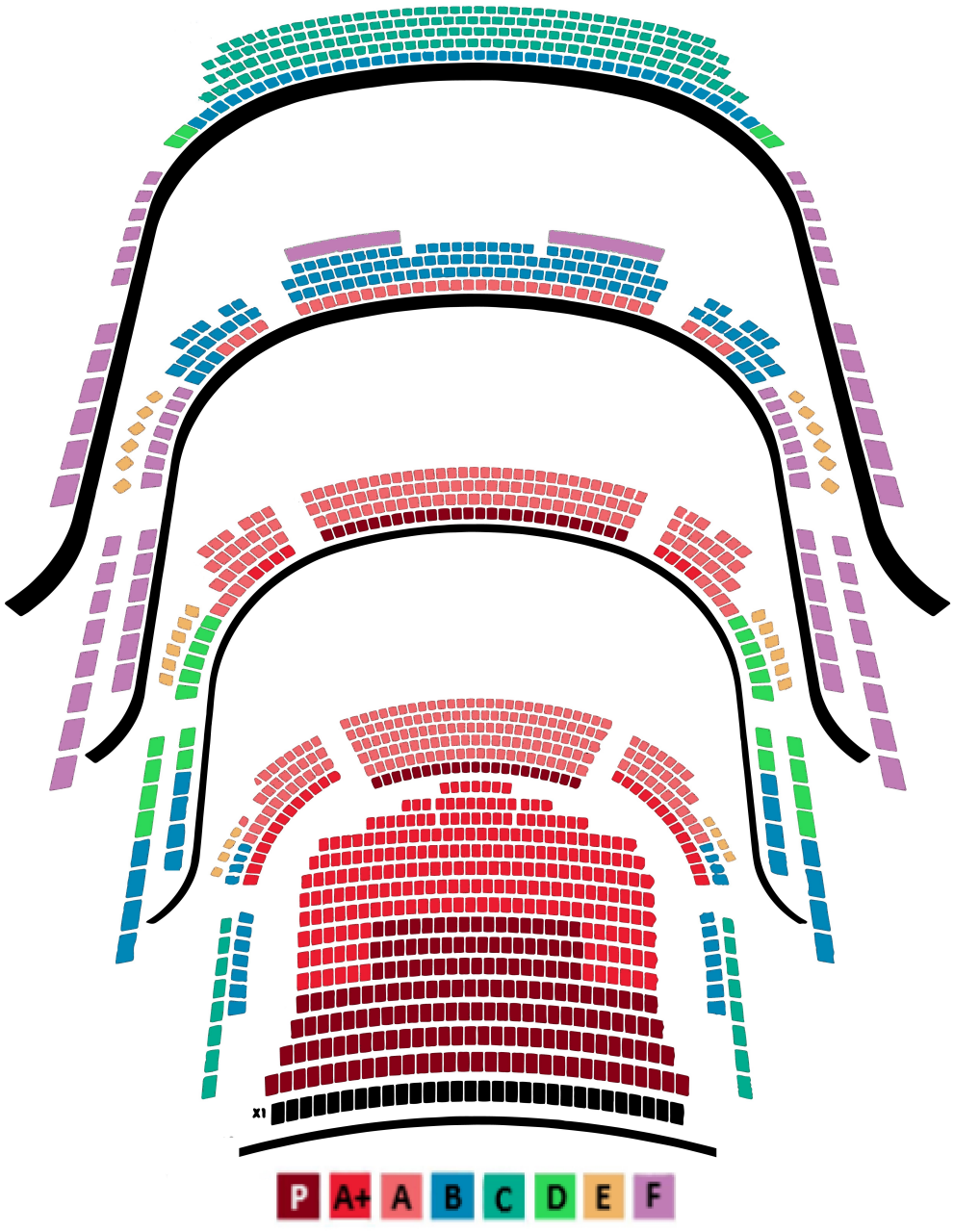


Figure 14: Our suggested new seat map. A new premium category is introduced, and the category A tickets are differentiated into A+ and A

5.6 The Effect of Proposed Pricing Strategy

In Table 16 a summary of the total effect of the new price strategy on opera and ballet performances on the main stage is shown.

ESTIMATED INCREASE IN REVENUE BASED ON NEW PRICING STRATEGY								
	PRICE ELASTICITY	INCREASED REVENUE IN OUR DATASET		INCREASED REVENUE PER PERFORMANCE		ANNUAL TOTAL INCREASED REVENUE		NEW SEAT COVERAGE (A/A+/PREMIUM)
CONSERVATIVE ESTIMATE	-0.7	kr	7 486 746	kr	73 399	kr	13 872 500	86,2 %
POSITIVE ESTIMATE	-0.1	kr	14 262 598	kr	139 829	kr	26 427 755	95,5 %

Table 16: Estimated increase in income. Detailed calculations in [appendix D].

When implementing the new seatmap with discount restrictions as explained, the estimated ticket income from opera and ballet on the main stage increases by 13,9 - 26,4 million NOK, depending on the price elasticity. Having in mind that the total income from opera and ballet performances on the main stage was 91 million NOK in 2016 [Lysø, 2017], this is an increase between 15-29 % in the ticket income on these two genres on the main stage.

This is based on changing category A into three categories, and also expanding category A with 36 tickets from category B. Our estimates shows that the higher the price elasticity, the lower will the seat coverage be. However, the income will rise, and also there will be more available seats longer up to the show date. Referring back to the market research done by the opera house in section 4.5, one of the main reasons the audience did not attend the opera and ballet performances was because of a lack of tickets to the show they wanted to see.

We have made the assumption that a big part of the audience will still choose to pay a bit more for a ticket in category A where there are restrictions on the use of discounts.

5.7 Revenue Items to Explore Besides Ticket Income

We will in this section briefly explore other revenue items DNO&B could affect to reduce their earnings gap in accordance with the revenue management theory. The overall goal with this is to identify opportunities to increase revenue in DNO&B without, or in addition to adjusting ticket prices. In order to decrease the earnings gap, the ratio between earned and unearned income must be affected. As seen in Table 17 unearned income accounts for 620.8 million NOK and earned income 153.8 million NOK. There is also an uncovered deficit of 42.4 million NOK. The earnings gap is currently 81%. It requires substantial changes to the earned income if the earnings gap shall be affected significantly. We will go through the selected revenue items that can be to some extent in this section.

EARNINGS GAP 81%	
EXPENDITURES	**816.6 MNOK**
EARNED INCOME	153.8 MNOK
Ticket income	66.2 %
Food and beverages	4.8 %
Souvenir store	2.3 %
Events/commercial income	6 %
Other	20 %
Total earned income	100 %
UNEARNED INCOME	620.8 MNOK
State grant	96.8 %
Sponsors	2.7 %
Other	0.4 %
Total unearned income	100 %
DEFICIT	42.4 MNOK

Table 17: Earned and unearned income 2016 DNO&B.

Unearned Income

On the unearned income side, we find the revenue item sponsors in addition to the main income state grant. At this point sponsor income only accounts for 2.7% of the unearned income, which is quite low having in mind that this comes from six main sponsors. To increase this is also a priority in the grant letter as a way to increase income. A way to increase this is to look for more sponsors, and come up with new ways sponsors can benefit from their donations to the opera house. One could for example get sponsors for different productions, and make the sponsors more visible specifically on different happenings in the opera house. These are just a few examples, the main point is that it should be possible to increase the income from sponsors.

Earned Income

A clear goal in accordance with theory is to capture as much revenue per customer as possible. This can be affected on the revenue items, like food, beverages and other sales. The food and beverages sales only accounts for 4.8% of the total earned income. This is due to the fact that these sales are outsourced to an external company named Restauranthuset Operaen AS, owned by Fursetgruppen. When visiting the opera house for a performance, it is possible to buy snacks and drinks online in advance so it is ready for you on the performance night. However, this service is not integrated to

DNO&B's website, operaen.no. By integrating this service with the ticket purchase site, one can assume that it is possible to capture more revenue per customer, and also reduce the queues for beverages during the breaks on performance nights. The process of adding extra add-ons should be as simple as possible in the purchasing process to capture as much revenue as possible per customer [Appendix F]. This should definitely be exploited further.

The souvenir store also accounts for a minor contribution to the earned income. This should also be exploited further to maximize revenue.

Finally, there is some income listed from different events and commercial income which adds up to 6% of the total earned income. Making profits of unused capacity from different rooms and locations at the opera house should be maximized when staff and the productions are not using it. Capturing revenue from all these different revenue items can potentially reduce the earnings gap.

In addition, there is potential for new initiatives to capture more revenue. For example, DNO&B could change the unmanned wardrobe to a manned wardrobe potentially adding more revenue per guest. In addition, one can imagine that this would be popular for the audience. Making deals with the food and beverage sale and offering package deals with a performance and a dinner out could also be exploited further. A similar model in cooperation with taxi companies could provide chauffeur service to and from the opera. Taking all these suggestions into action could potentially increase the revenue each visitor leaves substantially.

Our aim in this thesis has been to explore potential earned income from ticket sales. However, we find that there is opportunity to increase earned and unearned income from other sources. These opportunities should be explored and utilized without compromising the mission to be Norway's opera house.

6 Discussion

6.1 Evaluation of Findings

Our findings shows that re-balancing the equity in DNO&B is not done by a quick fix. Our research question was formulated based on criticism from reports from the Ministry of Culture, evaluations from the auditor general of Norway and a lot of bad media coverage. All pointed out the same thing, the price level is too low in DNO&B, and increasing this will help the financial situation.

The total revenue in DNO&B is 774 million NOK in 2016 and the equity is currently -111 million NOK [Lysø, 2017]. Our findings can seem insignificant at first sight when comparing with the total budget. By changing the price policy, they can possibly earn 26 million NOK more per year on opera and ballet performances on the main stage. However, this indicates a significant increase in ticket revenue. By affecting the other revenue items discussed in Section 5.7 they might be capable of increasing revenue by several million, but it will still take them years to restore their equity. However, this amount is significant when looking at the yearly deficit in the past three years. Our solutions will also help the issue that audience members are not attending because there is a lack of available tickets.

We have discussed how research implies that this industry is suffering from Baumol's cost disease. It could be possible to explore how increasing the ticket prices further will help restoring the balance faster an be a better cure long term. But it will be in conflict with the main goal of the opera, being an affordable opera house for the whole population. The conclusion of this section is that it is very difficult to increase the revenue significantly, and still be accessible for the whole population. One might conclude that the Ministry of Culture is asking for something nearly impossible. They are demanding the opera house to be Norway's opera house, while keeping them in a very pressured financial situation. The situation is extremely hard to solve.

6.2 Possible Effects of Changes in the Pricing Structure

The adjustments we suggest are quite minor, as most categories are unchanged. However, some of the changes can be perceived as quite controversial. This is especially because the changes to the biggest extend affect the audience that perhaps has the strongest emotional connections to the opera house, namely the subscribers and the employees. Some of the subscribers have had their

fixed seats for several years. Being forced to move or to pay more might create very negative reactions, and might cause some subscribers to leave. For two reasons, we believe that subscribers will generally stay. First, we believe that the customers with the strongest connection to the opera are generally the ones who have a high willingness to pay. Also, the long-term customers with a strong emotional connection to the opera house have more knowledge and understanding of the financial situation, and therefore easier will accept an increased price. Another important aspect of this discussion is that having many subscribers is mainly beneficial if it is hard to sell tickets otherwise. Having a large group of subscribers that occupy the best seats are in direct conflict with being Norway's opera house.

The pricing scheme used by DNO&B seems to be based on an equality principle. The prices shall be low enough that the art is available to all parts of society. The question is whether having a strategy where all prices are low prices generates most access. A good example of the opposite can be found in the airline industry. Before revenue management systems were implemented, most tickets were quite expensive. When airlines started to exploit some customers high willingness to pay, prices went down for the more price sensitive customers. This increased the general access to flights, making long distance travel available to more people.

We find the same purchasing pattern in all shows, where tickets close to the stage, centered seats and 1st row seats are most popular. If these seats are always the most popular, it indicates that there certain objective criteria for seat quality, which makes the seats vertically differentiated. If a product is vertically differentiated, it would not be perceived as particularly unfair by the consumers that seats have different price. Denying people discount however might be perceived as more unfair than a general price increase.

6.3 Reliability

For a study to be meaningful and credible, it must have high reliability. In this case study there are some threats to reliability. First of all, as we have seen in section 4.2.1. there are some limitations in our dataset. Not having data for a whole season might cause a skew in the result. A lack of insight regarding what seats appear available and unavailable might also give a false impression of which seats that are preferred by the customers.

Another issue is whether we have used perfectly transmissible theory. Opera and ballet are two narrow genres, and therefore it is little research in this specific field. A lot of the research is based on the live performing arts sector as a whole, including theaters, orchestras and other genres in

addition. None of the studies are based on research from Norway or Scandinavia in particular, some of the sources have included Norway in bigger studies. The fact that we are using international studies based on the Norwegian Opera House might give misleading results to some extent. It is possible that demand elasiticities behave differently for operas using the American and the European financing models. Especially when taking into account how new this genre is in Norway compared to other nations with a longer history to the opera and ballet as art forms. However, what we have found in reports and statistics from Norway confirms the finding in the more international studies. Most of the studies that have been done to find demand elasiticites are also quite old. The results from these reports are also a bit inconsistent, even though most studies find that the demand is inelastic.

When calculating how much income the new floor plan and pricing strategy will generate, it requires making assumptions regarding new customer behaviour. Our assumptions are based on our impressions of behavior from the literature, but not any acutal experiments. It is difficult to predict how the customers will react to the changes we are suggesting, especially since there are some quite clear customer norms, and the cultural institutions are working in pretty similar ways. Changing pricing structure in DNO&B might lead to huge attention from the media, and strong reactions from the audience. To be prepared for the best possible implementation, experiments should be held with the current audience to make sure the recommendation is as good as we are stating.

6.4 Relevance in Other Live Performing Arts Institutions in Norway

A new era in the Norwegian economy may cause many cultural institutions to receive less state aid, making this research relevant to other instances. Based on what we find in the literature on price sensitivity and purchasing pattern, we can in general assume high transmissability to other performing arts institutions.

The Ministry of Culture are financing 20 live performing arts institutions and seven orchestras over the state budget [Regjeringen, 2016]. In addition, there are other live performing arts organizations that the local municipality provides for. Many of them are struggling with their financing, and experience rising costs. An evaluation of six of the live performing arts institutions from the Auditor General of Norway shows a trend with decreasing earned income, increasing state grants and rising operating expenditures [Foss, 2015].

The cultural institutions run by the government shares a lot of similarities even though their art forms varies. As seen in Table 3 the discount scheme are pretty similar in the institutions in Oslo. A lot of the organizations do experience high seat coverage meaning that there is a potential of capturing more revenue if implementing stricter usage of free tickets and discounts. This amount in total will be of a high significance if this would be implemented in all the cultural institutions the government subsidize. It would also have a much higher effect to change the discount policies if everyone implements the change to avoid cannibalization of the market. This is especially an important opportunity with the senior discount. Since the Ministry of Culture finances these organizations to a broad extent, they should consider using their power to do changes in all the institutions. The report from the General Auditor of Norway displays the usage of free tickets in six institutions pointing out that free tickets accounts for around 5.5% to 18% in six of the institutions subsidized over the state budget in 2014 [Foss, 2015, p. 244]. The price leaks we have identified in the opera house, is probably present in the other institutions as well. However, due to unequal demand and price level, the alternative cost of free tickets can differ in other institutions.

Even though implementing of this strategies might not add up to a significant size of the total revenue in all institutions, one must remember that these institutions are very expensive art forms. This implies that the alternative cost of the subsidies are very high. For example, Norwegian Festival Statistics from 2015 shows that 244 million NOK was the total state aid for festivals including grants from local municipalities [Rykkja and Ericsson, 2016]. The same report counts 760 000 visitors on free events, and reporting 581 000 tickets. This adds up to 1.34 million cultural experiences in total. What we can read from this is that even if the extra income generated by implementing the changes in pricing strategy are relatively small compared to the budget and deficit, it is important because the alternative cost is so high. 26.4 million NOK can create very much cultural activity elsewhere.

It is time to challenge the mindset that the static price regime with low prices for all, is the most efficient way to make culture available. Many institutions with a fixed seatmap could have potential to capture more revenue by implementing a price regime where prices of different seats are based on seat quality. All institutions could have benefits from a more conscious dynamic approach to price setting where demand is more important. If one utilizes the fact that some customers have a high willingness to pay, one can also use this income to give price reductions to customers with a lower willingness to pay, thereby being even more accessible.

7 Conclusion

Opera and ballet are expensive art forms that are impossible to fully finance through ticket sales. Increasing productivity is difficult as performing arts will always be labour intensive, and little productivity gains can be made. The Norwegian economy has so far had room for large government subsidies to the performing arts sector. However, we have seen many examples of how this sector is among the first to suffer if a government is forced to make cut backs. At this point, DNO&B is in a serious financial situation, with a large negative equity and negative profits most of the recent years. It is therefore necessary to take measures.

The biggest challenge when it comes to pricing in subsidized performing arts, which has also been the goal of this thesis, is to find a price regime that balance revenue maximization with being widely accessible for the public. Price differentiation can be an effective tool in making the opera house available. However, the discount scheme as it stands is not fully serving its purpose. Most of the research done on performing arts audience, including market research on DNO&B in particular, show that most of the audience are elite in terms of education and income. The sales log from the 2015/2016 clearly shows that the best tickets are the most popular, indicating that the audience in general are not price sensitive. We also find that there is excess demand, and that people find it difficult to get desired tickets. With the current pricing policy, the customers who has a high willingness to pay are now getting the best seats, and this at a discounted price. Free and discounted tickets to employees in particular, but also friends of them and of the subscribers are not only creating a major opportunity cost, but also in conflict with the mission of being Norway's Opera house. We find it obvious to make changes in these categories. By equating the price level of opera and ballet, making some small adjustment in the discount schemes and restricting the use of discount for some of the most popular seats, we show potential to increase the revenue from tickets sales by 14 - 26 million NOK. No discounts are completely removed, and the pricing scheme still secures general public access. Adjusting ticket prices for inflation annually will also affect earned income positively without sacrificing access. But there are also opportunities to increase revenue without changing the ticket prices. There are quite certainly possibilities to increase income from sponsors, food and beverage sales, rental of unused capacity, souvenirs and exploring new options and collaborations to a further extent.

However, increasing the income to the extent where the operahouse is out of debt and subsidies can be reduced seems utopian at this point. In the introduction of the analysis, we stated that a clear goal is to cover the negative equity on -111 NOK. This will take between 4 and 8 years approximately based on our estimates. The size of the operation cost and pension liabilities is overriding the extra

income that is possible to generate without making drastic changes that would change the mission of the Opera House. But taking the alternative cost into account, making changes that generates more income is still very important. Even though 13.9-26.4 million NOK is just a small part of the budget, it could potentially generate much culture if used elsewhere. Therefore, rethinking the pricing strategy is important. A more market-oriented approach to pricing where prices change to a greater extent according to demand should not be seen as conflicting with widespread accessibility. Rather as an opportunity to provide a more sustainable institution where culture is available to a wide audience despite increasing costs.

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A Grant Letter 2016

DET KONGELIGE
KULTURDEPARTEMENT

Den Norske Opera & Ballett
Postboks 785 Sentrum
0106 OSLO

Deres ref	Vår ref	Dato
	15/1010-	22.12.2015

Statstilskudd for 2016 – tilskuddsbrev

1. TILDELING AV STATSTILSKUDD FOR 2016

Vi viser til budsjettsøknad for 2016.

Kulturdepartementet tildeler med dette Den Norske Opera & Ballett et driftstilskudd for 2016 på

kr 600 806 000,-.

Tilskuddet er bevilget under kap. 324, post 70, jf. Prop. 1 S (2015–2016) og Innst. 14 S (2015–2016). Likviditetstilskuddet på 25 mill. kroner er videreført for å sikre likviditeten i 2015. Beløpet kan kun benyttes til dette formål og ikke til å dekke driftskostnader.

Den Norske Opera & Ballett må følge opp de forutsetninger og krav til økonomiforvaltning og kontroll samt rapportering som er trukket opp i dette brevet og i *vedlagte Retningslinjer for økonomiforvaltning og kontroll for tilskuddsmottakere som får tildelt driftstilskudd fra Kulturdepartementet i 2016*.

Statstilskuddet vil bli utbetalt kvartalsvis til konto nr. 8200 06 20145.

2. MÅL

2.1 Mål og oppfølgingskriterier

Det overordnede målet for bevilgningene til kulturformål er å bidra til at alle kan få tilgang til kunst og kultur av høy kvalitet og fremme kunstnerisk utvikling og fornyelse. I et kontrastrikt og mangfoldig samfunn er det viktig å legge til rette for og fremme en stor bredde av stemmer og tilbud. Kulturtilbud med offentlig støtte må derfor være allment tilgjengelige, slik at de

Postadresse
Postboks 8030 Dep
NO-0030 Oslo
postmottak@kud.dep.no

Kontoradresse
Akersg. 59

http://www.kud.dep.no/

Telefon*
22 24 90 90
Org. nr.
972 417 866

Kunstavdelingen

Saksbehandler
Julie Høigilt
22248039

som ønsker det, gis mulighet til å delta i og oppleve et mangfoldig kulturliv.

Målet for bevilgningene til scenekunstformål i 2016 er å legge til rette for produksjon, formidling og etterspørsel av ulike scenekunstuttrykk, jf. Prop. 1 S (2015–2016).

Det er en forutsetning at tilskuddet disponeres i samsvar med de mål som er oppgitt i søknaden for 2016, og at Dn noske Opera & Ballett utformer hensiktsmessige systemer for oppfølging av egen måloppnåelse.

2.2 Spesielle forhold/satsinger i 2016

Kulturdepartementet viser til Prop. 1 (2015–2016) for omtale av evalueringer. Arbeidet med periodiske evalueringer av musikk- og scenekunstinstitusjonene vil bli videreført.

I 2015–2016 skal Hordaland Teater, Hålogaland Teater og Teater Ibsen evalueres.

3. FORUTSETNINGER KNYTTET TIL STATSTILSKUDDET

Den Norske Opera & Ballett skal målrette virksomheten og utvikle styringssystemer som sikrer høy kvalitet og god ressursutnyttelse. Det forutsettes at mottakere av tilskudd fra Kulturdepartementet har systemer for å ivareta sikkerhet og beredskap, og følger de til enhver tid gjeldende regler og retningslinjer.

Alle tilskuddsmottakere skal utnytte sitt egeninntektspotensiale. Departementet legger til grunn at den enkelte institusjon har utarbeidet planer for å utvikle sine ulike inntektskilder med sikte på å øke sine egeninntekter, herunder billettinntekter, andre inntektsgivende aktiviteter og tiltak, samt gaver og sponsorinntekter.

Utover eventuell kortsiktig driftskreditt kan institusjonen ikke oppta lån uten å legge dette fram for departementet. Eventuelt opptak av driftskreditt må godkjennes av institusjonens styre før saken legges fram for departementet.

Institusjoner som mottar årlig driftstilskudd fra Kulturdepartementet, skal som hovedregel ikke innvilges tilskudd fra Norsk kulturfond. Unntak kan vurderes bl.a. for å fremme institusjonenes samarbeid med det frie feltet.

Departementet er opptatt av at institusjonene har god kunnskap om sitt publikum og arbeider aktivt for å nå nye publikumsgrupper, bl.a. ved å gjennomføre publikumsundersøkelser. Det skal i årsrapporten gis en redegjørelse for hvordan institusjonen følger opp arbeidet med publikumsutvikling.

Det er en forutsetning for det tildelte tilskuddet at alle som har ledsagerbevis for funksjonshemmede, og som kjøper billett til ordinær pris til et arrangement, får gratis billett for sin ledsager. Det kan eventuelt tilbys rabattordninger som gjør at billettprisene for den funksjonshemmede og ledsager samlet ikke overstiger prisen for en ordinær billett.

I samsvar med St.meld. nr. 32 (2007–2008) *Bak kulissene* og Innst. S. nr. 157 (2008–2009) skal institusjonene med virkning fra 2009 gjennomføre eksternt tilsyn av utstyrs- og eiendomsforvaltningen hvert fjerde år, med rapporter om tilstand, planer, gjennomførte tiltak, kompetanse og organisering. Det bes redegjort for hvordan Den Norske Opera & Ballett har fulgt opp dette. Rapport fra slike tilsyn med institusjonens plan for oppfølgingen skal forelegges Kulturdepartementet.

Det skal i årsrapporten gis en kort redegjørelse for oppfølgingen av selskapets samfunnsansvar i tråd med regjeringens eierskapspolitikk, jf. pkt. 8.3.3 i publikasjonen "Et mangfoldig og verdiskapende eierskap" utarbeidet av Nærings- og fiskeridepartementet i juni 2014.

Av hensyn til saksforberedelser, herunder oppnevning av styremedlemmer, skal dato for generalforsamlingen fastsettes i kontakt med departementet.

Særskilte krav til rapportering i 2016
Den Norske Opera & Ballett skal i 2016 rapportere kvartalsvis, per 31. mars, 30. juni og 30. september, i tillegg til årsrapporten. Rapportene skal foreligge senest en måned etter rapportperiodens utløp.

Det samlede likviditetstilskuddet på 100 mill. kroner, samt avkastning, skal stå på særskilt bankkonto. Midlene kan kun benyttes til regulering av likviditeten gjennom året og skal være intakt primo januar påfølgende år.

I tillegg til ordinært kvartalsvis resultatregnskap med budsjettall skal følgende legges ved og oversendes departementet:

- Aldersfordelt saldoliste over leverandører
- Kontospesifisert resultat og balanse
- Utskrift av Hovedbokskonto for den særskilte bankkontoen der likviditetstilskuddet på 75 mill. kroner er satt inn og som viser bevegelsen på kontoen

Vi viser i denne sammenheng også til pkt. 4 Rapportering nedenfor

Pensjonsforpliktelser
Alle kulturinstitusjoner som etter regnskapsloven er definert som store foretak, må regnskapsføre pensjonsforpliktelser i samsvar med god regnskapsskikk.

Mange institusjoner har i de siste årene erfart en markert økning i pensjonskostnadene, noe som kan bety at egenkapitalen blir redusert og i noen tilfeller negativ. Disse økningene i pensjonskostnader skyldes i overveiende grad endringer i beregningsparametrene.

Departementet praktiserer som styringsprinsipp overfor institusjonene at tapt egenkapital må gjenopprettes i løpet av ett år. Departementet vil ikke praktisere dette styringsprinsippet overfor institusjonene når årsaken til regnskapsunderskudd og/eller tap av egenkapital helt ut skyldes endringer i beregninger av pensjonsforpliktelser fra det ene året til det andre. Departementet legger imidlertid til grunn at institusjonene treffer nødvendige tiltak slik at balansen mellom inntekter og kostnader, inkludert pensjonskostnader, forbedres.

Institusjonene må redegjøre for saken i egen note til regnskapet. Kulturdepartementet vil følge utviklingen i pensjonskostnadene nøye fremover og vurdere konsekvensene for institusjonenes drift.

I forbindelse med innsendelse av budsjettsøknad for 2017 med årsrapport og regnskap for 2015 bes institusjonen om å fylle ut vedlagte skjema. Skjema vil bli oversendt elektronisk til institusjonene.

Opplysningene må sendes departementet innen 1. mars 2016.

4. RAPPORTERING

Den Norske Opera & Ballett må utarbeide rapport om aktiviteten i 2016. Årsrapport leveres i webskjema for budsjettsøknaden for 2018.

Rapporten skal blant annet inneholde regnskap for 2016 og omtale av resultater i samsvar med de mål som er omtalt i søknaden for 2016, samt andre krav og forutsetninger trukket opp i tilskuddsbrevet. Departementet vil komme tilbake til krav til rapporten i eget rundskriv om budsjettsøknader for 2018.

Statistikk for 2016 skal leveres til Norsk teater- og orkesterforening over portalen scenestatistikk.no.

Følgende dokumenter for 2016 skal sendes til departementet så snart de foreligger og senest innen 1. juni 2017:

- revidert regnskap med balanse og noter
- revisjonsberetning
- styrets årsberetning

Dokumentene skal undertegnes og sendes på e-post til postmottak@kud.dep.no.

5. FRISTER I 2016

Frist for levering av budsjettforslag for 2017 og rapport for 2015 i webskjema for budsjettsøknaden for 2017 er 1. mars 2016. Departementet vil komme tilbake til dette i budsjettrundskrivet for 2017.

6. ANNEN INFORMASJON

Regjeringen innførte i 2014 en gaveforsterkningsordning for museene. Denne er fra 2016 utvidet til også å gjelde andre kulturformål, og med en ramme på 45 mill. kroner. Ordningen innebærer at pengegaver fra stiftelser og private givere til kunst- og kulturinstitusjoner utløser et statlig tilskudd på 25 pst. av gavebeløpet, så fremt retningslinjene for ordningen er innfridd.

Reviderte retningslinjer og søknadsskjema (nytt av i år) er å finne på departementets hjemmesider: www.regjeringen.no/kud.

Med hilsen

Bernt Martin Schjerven (e.f.)
kst. underdirektør

Julie Høigilt
rådgiver

Dette dokumentet er elektronisk godkjent og har derfor ingen håndskreven signatur.

Vedlegg:

- Retningslinjer for økonomiforvaltning og kontroll for tilskuddsmottakere som får tildelt driftstilskudd fra Kulturdepartementet i 2016
- Skjema – pensjon

B Calculations of Earnings Gap in Described Opera Houses

CALCULATIONS OF THE EARNINGS GAP		
The Royal Swedish Opera (SEK)		2015
Unearned Income		
State aid	kr	439 324 000
Sponsor and donations	kr	5 712 000
SUM	**kr**	**445 036 000**
Earned Income		
Turneer	kr	2 444 000
Additional invoiced costs	kr	7 804 000
Sales to audience	kr	3 980 000
Other income	kr	4 717 000
Rent	kr	5 292 000
Recettmedel	kr	68 703 000
SUM	**kr**	**92 940 000**
Total costs		**543742000**
Earned income %		**17 %**
Earnings gap %		**83 %**
Opera National de Paris	***(EUR)***	
Unearned Income		
State subsidy	€	95 700 000
Sponsorship-partnership	€	12 100 000
SUM	**€**	**107 800 000**
Earned Income		
Performances	€	64 100 000
Commercial revenue	€	18 400 000
Other income including financial products	€	9 900 000
SUM	**€**	**92 400 000**
Expenses	**€**	**200 400 000**
Earned income %		**46 %**
Earnings gap %		**54 %**
The Metropolitan Opera	***(USD)***	
Earned Income		
Earned Income	USD	161 000 000
Unearned Income		
Unrestricted Contributions	USD	149 800 000
Expenses	**USD**	**309 700 000**
Earned Income %		**52 %**
Earnings gap %		**48 %**

The Norwegian National Opera & Ballet		2015		2016
Unearned Income				
State aid	kr	589 604 000	kr	600 806 000
Sponsors	kr	16 138 123	kr	16 990 546
Other financial contributions	kr	2 567 328	kr	2 656 378
SUM	**kr**	**608 309 451**	**kr**	**620 452 924**
Earned Income				
Food & Beverage	kr	6 117 899	kr	7 410 695
Shop	kr	3 464 920	kr	3 566 396
Guided tours	kr	2 732 572	kr	2 827 978
Banquet / Arrangement	kr	4 577 777	kr	7 046 075
Other commercial income	kr	1 629 303	kr	2 160 040
Program Sales	kr	1 399 008	kr	1 406 772
Rent	kr	7 950	kr	36 684
Sales	kr	3 035 100	kr	4 563 720
Contingent ballet school / children's choir	kr	1 728 308	kr	1 797 835
Contributions from tour partners	kr	3 515 965	kr	2 353 482
Contributions from other partners	kr	958 504	kr	914 459
Other income	kr	5 624 123	kr	16 815 169
Ticket income	kr	100 051 974	kr	102 893 917
SUM	**kr**	**134 843 403**	**kr**	**153 793 222**
Costs	**kr**	**809 774 015**	**kr**	**816 602 907**
Earned income %		**17 %**		**19 %**
Earnings gap %		**83 %**		**81 %**
Royal Opera House	***(GBP)***			
Unearned Income				
Investment Income	£	1 600 000		
Fundraising	£	29 300 000		
ACE Capital Grant	£	2 700 000		
ACE NPO & Bridge	£	25 800 000		
SUM	**£**	**59 400 000**		
Earned Income				
Commercial and other income	£	26 500 000		
Box office receipts	£	42 300 000		
SUM	**£**	**68 800 000**		
Expenditure	**£**	**125 100 000**		
Earned Income %		**55 %**		
Earnings Gap %		**45 %**		

REFERENCES

Kungliga Operan Årsredovisning 2015 http://www.operan.se/globalassets/documents/pdf/arsredovisning2015_tryck.pdf

Den Norske Opera og Ballett Årsrapport 2015 http://operaen.no/globalassets/arsrapporter/aarsrapport_2015.pdf

Opera National de Paris Season Report 2015/16 https://www.operadeparis.fr/data/season-report-15-16/

The Metropolitan Opera Annual Report 2014-15 http://www.metopera.org/metoperafiles/annual_reports/2015-16/FY15_Annual_Report.pdf

Royal Opera House The Annual Report 2014/15 https://s3-eu-west-1.amazonaws.com/static.roh.org.uk/about/annual-review/pdfs/annual_review_1415.pdf

The earnings gap is calculated by this formula: (expenditures-earned income)/expenditures*100

C Calculations of DNO&B's Subsidies into Euros

STATE AID DNO&B		2014		2015
NOK	kr	577 244 000	kr	589 604 000
Exchange rate EUR		8,3571		8,9477
EUR	€	69 072 286	€	65 894 476
Exchange rate from www.dnb.no, aid from annuan reports				

D Calculations Potential Income New Seat Map

The following figure shows the discount usage on average per performance night, and the suggested stipulated change in accordance with the new price strategy. We have assumed that the use of the discounts will be the same, even though the discounts percentage are changing.

DISCOUNT USAGE TODAY ON AVERAGE PER PERFORMANCE NIGHT							
Ticket Category/Discount	Full price	10 %	20 %	50 %	70 %	100 %	Total
Children				46			
Student				35			
Employee					33		
Stage card				13			
Small group		8					
Big group			60				
School class					4		
Senior			77				
OBOS			88				
Free tickets						40	
Subscribers			156				
Other discounts			6	1			
Other sponsor discounts			14				
NUMBER OF TICKETS	211	8	400	95	37	40	**791**

STIPULATED DISCOUNT USAGE ON AVERAGE PER PERFORMANCE NIGHT							
Ticket Category/Discount	Full price	10 %	20 %	50 %	70 %	100 %	Total
Children			46				
Student			35				
Employee			33				
Stage card				13			
Small group		8					
Big group		60					
School class					4		
Senior	77						
OBOS	88						
Free tickets*	8					32	
Subscribers*	78		78				
Other discounts			6	1			
Other sponsor discounts			14				
NUMBER OF TICKETS	462	68	211	14	4	32	**791**
The colored area indicates where the discount is moved from.							
* We have assumed a 20% reduction, mooving 8 tickets to full price.							
** We have calculated that 50% will achieve full price due to the fact that one can not buy extra tickets on the subscriptions and restrictions in the seat map where one can use discount on subscription. This leaves half in the full price category and the rest with a 20% discount.							

Further follows a sorting of the productions in our sample for the further calculations in this appendix section. The productions are sorted on seat coverage and current pricing scheme.

SORTING PERFORMANCES ON PRICE AND SEAT COVERAGE							TOTAL
SEAT COVERAGE	100 %	100 %	100 %	100 %	87 %	89 %	
FULL PRICE	745	795	695	645	745	645	
PRODUCTIONS	La Traviata The Magic Flute A Swan Lake	Turandot	The Nutcracker	Anna Karenina Giselle	Don Giovanni	Katja Manon	
NUMBER OF PERFORMANCES	30	10	20	18	5	19	**102**

Further follows calculations for estimated new demand and potential increase in revenue based om -0.1 and -0.7 price elasticities. The old capacity is collected from the dataset on the specific productions, but notice that the new capacity in the different categories is based on an average of the total dataset presented as the first table in this Appendix D. We have adjusted the full price sections when the productions are not sold out, and set the new capacity according to the actual sales numbers of the performances. The reason why we have adjusted the full price tickets is because when the performances are not sold out, this is the category that are used less than the other discount categories. These numbers are estimates, based on the assumptions mentioned.

CATEGORY A - 100% SOLD OUT - 645 NOK - ANNA KARENINA AND GISELLE														
Old Section	Old discount	Old usage	Old Price		Section	Discount	Capacity	New price	Old Price	Elasticity	Price increase %	Demand drop %	New demand	New revenue potential
A	Full price	184	kr	645	P (169)	-	169	875	645	-0,1	0,36	-0,04	163	142602
	100 %	43	kr	-	A+ (310)	Full price	145,5	795	645	-0,1	0,23	-0,02	142	112982
	70 %	49	kr	194		100 %	16	0	0	-0,1	0,00	0,00	16	0
	50 %	89	kr	323		70 %	2	239	194	-0,1	0,23	-0,02	2	466
	20 %	419	kr	516		50 %	7	398	323	-0,1	0,23	-0,02	7	2718
	10 %	7	kr	581		20 %	105,5	636	516	-0,1	0,23	-0,02	103	65538
B	Full price	36	kr	595		10 %	34	716	581	-0,1	0,23	-0,02	33	23761
SUM OLD REVENUE		827	kr	398 552	A (312)	Full price	147,5	695	645	-0,1	0,08	-0,01	146	101648
						100 %	16	0	0	-0,1	0,00	0,00	16	0
						70 %	2	209	194	-0,1	0,08	-0,01	2	414
SUM POTENTIAL NEW REVENUE PER PERFORMANCE			kr	536 913		50 %	7	348	323	-0,1	0,08	-0,01	7	2414
REVENUE INCREASE PER PERFORMANCE			kr	138 361		20 %	105,5	556	516	-0,1	0,08	-0,01	105	58203
NUMBER OF PERFORMANCES				18		10 %	34	626	581	-0,1	0,08	-0,01	34	1147
TOTAL POTENTIAL REVENUE INCREASE			kr	2 490 507	B (36)	Full price	36	695	595	-0,1	0,17	-0,02	35	25020
AVAILABLE SEAT CAPACITY PER PERFORMANCE				16	SUM		827						811	536913

CATEGORY A - 100% SOLD OUT - 645 NOK - ANNA KARENINA AND GISELLE														
Old Section	Old discount	Old usage	Old Price		Section	Discount	Capacity	New price	Old Price	Elasticity	Price increase %	Demand drop %	New demand	New revenue potential
A	Full price	184	kr	645	P (169)	-	169	875	645	-0,7	0,36	-0,25	127	110964
	100 %	43	kr	-	A+ (310)	Full price	145,5	795	645	-0,7	0,23	-0,16	122	96842
	70 %	49	kr	194		100 %	16	0	0	-0,7	0,00	0,00	16	0
	50 %	89	kr	323		70 %	2	239	194	-0,7	0,23	-0,16	2	399
	20 %	419	kr	516		50 %	7	398	323	-0,7	0,23	-0,16	6	2330
	10 %	7	kr	581		20 %	105,5	636	516	-0,7	0,23	-0,16	88	56175
B	Full price	36	kr	595		10 %	34	716	581	-0,7	0,23	-0,16	28	20367
SUM OLD REVENUE		827	kr	398 552	A (312)	Full price	147,5	695	645	-0,7	0,08	-0,05	139	96880
						100 %	16	0	0	-0,7	0,00	0,00	16	0
						70 %	2	209	194	-0,7	0,08	-0,05	2	394
SUM POTENTIAL NEW REVENUE PER PERFORMANCE			kr	468 240		50 %	7	348	323	-0,7	0,08	-0,05	7	2301
REVENUE INCREASE PER PERFORMANCE			kr	69 688		20 %	105,5	556	516	-0,7	0,08	-0,05	100	55475
NUMBER OF PERFORMANCES				18		10 %	34	626	581	-0,7	0,08	-0,05	32	1093
TOTAL POTENTIAL REVENUE INCREASE			kr	1 254 391	B (36)	Full price	36	695	595	-0,7	0,17	-0,12	32	25020
AVAILABLE SEAT CAPACITY PER PERFORMANCE				110	SUM		827						717	468240

CATEGORY A - 100% SOLD OUT - 695 NOK - THE NUTCRACKER															
Old Section	Old discount	Old usage	Old Price		Section	Discount	Capacity	New price	Old Price	Elasticity	Price increase %	Demand drop %	New demand	New revenue potential
A	Full price	147	kr	695	P (169)	-	169	975	695	-0,1	0,40	-0,04	162	158137
	100 %	19	kr	-	A+ (310)	Full price	145,5	875	695	-0,1	0,26	-0,03	142	124015
	70 %	35	kr	209		100 %	16	0	0	-0,1	0,00	0,00	16	0
	50 %	240	kr	348		70 %	2	263	209	-0,1	0,26	-0,03	2	511
	20 %	346	kr	556		50 %	7	438	348	-0,1	0,26	-0,03	7	2983
	10 %	4	kr	626		20 %	105,5	700	556	-0,1	0,26	-0,03	103	71937
B	Full price	36	kr	645		10 %	34	788	626	-0,1	0,26	-0,03	33	26082
SUM OLD REVENUE		827	kr	410 961	A (312)	Full price	147,5	795	695	-0,1	0,14	-0,01	145	115496
						100 %	16	0	0	-0,1	0,00	0,00	16	0
						70 %	2	239	209	-0,1	0,14	-0,01	2	470
SUM POTENTIAL NEW REVENUE PER PERFORMANCE			kr	598 266		50 %	7	398	348	-0,1	0,14	-0,01	7	2742
REVENUE INCREASE PER PERFORMANCE			kr	187 305		20 %	105,5	636	556	-0,1	0,14	-0,01	104	66133
NUMBER OF PERFORMANCES				20		10 %	34	716	626	-0,1	0,14	-0,01	34	1139
TOTAL POTENTIAL REVENUE INCREASE			kr	3 746 101	B (36)	Full price	36	795	645	-0,1	0,23	-0,02	35	28620
AVAILABLE SEAT CAPACITY PER PERFORMANCE				20	SUM		827						807	598266

CATEGORY A - 100% SOLD OUT - 695 NOK - THE NUTCRACKER														
Old Section	Old discount	Old usage	Old Price		Section	Discount	Capacity	New price	Old Price	Elasticity	Price increase %	Demand drop %	New demand	New revenue potential
A	Full price	147	kr	695	P (169)	-	169	975	695	-0,7	0,40	-0,28	121	118306
	100 %	19	kr	-	A+ (310)	Full price	145,5	875	695	-0,7	0,26	-0,18	119	104231
	70 %	35	kr	209		100 %	16	0	0	-0,7	0,00	0,00	16	0
	50 %	240	kr	348		70 %	2	263	209	-0,7	0,26	-0,18	2	430
	20 %	346	kr	556		50 %	7	438	348	-0,7	0,26	-0,18	6	2507
	10 %	4	kr	626		20 %	105,5	700	556	-0,7	0,26	-0,18	86	60461
B	Full price	36	kr	645		10 %	34	788	626	-0,7	0,26	-0,18	28	21921
SUM OLD REVENUE		827	kr	410 961	A (312)	Full price	147,5	795	695	-0,7	0,14	-0,10	133	105372
						100 %	16	0	0	-0,7	0,00	0,00	16	0
						70 %	2	239	209	-0,7	0,14	-0,10	2	429
SUM POTENTIAL NEW REVENUE PER PERFORMANCE			kr	506 160		50 %	7	398	348	-0,7	0,14	-0,10	6	2502
REVENUE INCREASE PER PERFORMANCE			kr	95 199		20 %	105,5	636	556	-0,7	0,14	-0,10	95	60340
NUMBER OF PERFORMANCES				20		10 %	34	716	626	-0,7	0,14	-0,10	31	1040
TOTAL POTENTIAL REVENUE INCREASE			kr	1 903 987	B (36)	Full price	36	795	645	-0,7	0,23	-0,16	30	28620
AVAILABLE SEAT CAPACITY PER PERFORMANCE				137	SUM		827						690	506160

CATEGORY A - 100% SOLD OUT - 795 NOK - TURANDOT														
Old Section	Old discount	Old usage	Old Price		Section	Discount	Capacity	New price	Old Price	Elasticity	Price increase %	Demand drop %	New demand	New revenue potential
A	Full price	129	kr	795	P (169)	-	169	975	795	-0,7	0,23	-0,16	142	138660
	100 %	39	kr	-	A+ (310)	Full price	145,5	875	795	-0,7	0,10	-0,07	135	118345
	70 %	29	kr	239		100 %	16	0	0	-0,7	0,00	0,00	16	0
	50 %	32	kr	398		70 %	2	263	239	-0,7	0,10	-0,07	2	488
	20 %	549	kr	636		50 %	7	438	398	-0,7	0,10	-0,07	7	2847
	10 %	13	kr	716		20 %	105,5	700	636	-0,7	0,10	-0,07	98	68648
B	Full price	36	kr	745		10 %	34	788	716	-0,7	0,10	-0,07	32	24889
SUM OLD REVENUE		827	kr	507 477	A (312)	Full price	147,5	795	795	-0,7	0,00	0,00	147	117183
						100 %	16	0	0	-0,7	0,00	0,00	16	0
						70 %	2	239	239	-0,7	0,00	0,00	2	477
SUM POTENTIAL NEW REVENUE PER PERFORMANCE			kr	571 193		50 %	7	398	398	-0,7	0,00	0,00	7	2783
REVENUE INCREASE PER PERFORMANCE			kr	63 716		20 %	105,5	636	636	-0,7	0,00	0,00	106	67098
NUMBER OF PERFORMANCES				10		10 %	34	716	716	-0,7	0,00	0,00	34	1156
TOTAL POTENTIAL REVENUE INCREASE			kr	637 155	B (36)	Full price	36	795	745	-0,7	0,07	-0,05	34	28620
AVAILABLE SEAT CAPACITY PER PERFORMANCE				49	SUM		827						778	571193

CATEGORY A - 100% SOLD OUT - 795 NOK - TURANDOT														
Old Section	Old discount	Old usage	Old Price		Section	Discount	Capacity	New price	Old Price	Elasticity	Price increase %	Demand drop %	New demand	New revenue potential
A	Full price	129	kr	795	P (169)	-	169	975	795	-0,1	0,23	-0,02	165	161044
	100 %	39	kr	-	A+ (310)	Full price	145,5	875	795	-0,1	0,10	-0,01	144	126031
	70 %	29	kr	239		100 %	16	0	0	-0,1	0,00	0,00	16	0
	50 %	32	kr	398		70 %	2	263	239	-0,1	0,10	-0,01	2	520
	20 %	549	kr	636		50 %	7	438	398	-0,1	0,10	-0,01	7	3032
	10 %	13	kr	716		20 %	105,5	700	636	-0,1	0,10	-0,01	104	73107
B	Full price	36	kr	745		10 %	34	788	716	-0,1	0,10	-0,01	34	26506
SUM OLD REVENUE		827	kr	507 477	A (312)	Full price	147,5	795	795	-0,1	0,00	0,00	147	117183
						100 %	16	0	0	-0,1	0,00	0,00	16	0
						70 %	2	239	239	-0,1	0,00	0,00	2	477
SUM POTENTIAL NEW REVENUE PER PERFORMANCE			kr	607 556		50 %	7	398	398	-0,1	0,00	0,00	7	2783
REVENUE INCREASE PER PERFORMANCE			kr	100 079		20 %	105,5	636	636	-0,1	0,00	0,00	106	67098
NUMBER OF PERFORMANCES				10		10 %	34	716	716	-0,1	0,00	0,00	34	1156
TOTAL POTENTIAL REVENUE INCREASE			kr	1 000 789	B (36)	Full price	36	795	745	-0,1	0,07	-0,01	36	28620
AVAILABLE SEAT CAPACITY PER PERFORMANCE				7	SUM		827						820	607556

CATEGORY A - 100% SOLD OUT - 745 NOK - LA TRAVIATA, THE MAGIC FLUTE AND A SWAN LAKE															
Old Section	Old discount	Old usage	Old Price		Section	Discount	Capacity	New price	Old Price	Elasticity	Price increase %	Demand drop %	New demand	New revenue potential
A	Full price	217	kr	745	P (169)	-	169	975	745	-0,7	0,31	-0,22	132	129166
	100 %	35	kr	-	A+ (310)	Full price	145,5	875	745	-0,7	0,17	-0,12	128	111762
	70 %	30	kr	224		100 %	16	0	0	-0,7	0,00	0,00	16	0
	50 %	62	kr	373		70 %	2	263	223,5	-0,7	0,17	-0,12	2	461
	20 %	436	kr	596		50 %	7	438	372,5	-0,7	0,17	-0,12	6	2688
	10 %	11	kr	671		20 %	105,5	700	596	-0,7	0,17	-0,12	93	64829
B	Full price	36	kr	695		10 %	34	788	671	-0,7	0,17	-0,12	30	23521
SUM OLD REVENUE		827	kr	483 717	A (312)	Full price	147,5	795	745	-0,7	0,07	-0,05	140	111674
						100 %	16	0	0	-0,7	0,00	0,00	16	0
						70 %	2	239	223,5	-0,7	0,07	-0,05	2	455
SUM POTENTIAL NEW REVENUE PER PERFORMANCE			kr	540 876		50 %	7	398	372,5	-0,7	0,07	-0,05	7	2652
REVENUE INCREASE PER PERFORMANCE			kr	57 159		20 %	105,5	636	596	-0,7	0,07	-0,05	101	63946
NUMBER OF PERFORMANCES				30		10 %	34	716	671	-0,7	0,07	-0,05	32	1102
TOTAL POTENTIAL REVENUE INCREASE			kr	1 714 771	B (36)	Full price	36	795	695	-0,7	0,14	-0,10	32	28620
AVAILABLE SEAT CAPACITY PER PERFORMANCE				90	SUM		827						737	540876

CATEGORY A - 100% SOLD OUT - 745 NOK - LA TRAVIATA, THE MAGIC FLUTE AND A SWAN LAKE														
Old Section	Old discount	Old usage	Old Price		Section	Discount	Capacity	New price	Old Price	Elasticity	Price increase %	Demand drop %	New demand	New revenue potential
A	Full price	217	kr	745	P (169)	-	169	975	745	-0,1	0,31	-0,03	164	159688
	100 %	35	kr	-	A+ (310)	Full price	145,5	875	745	-0,1	0,17	-0,02	143	125091
	70 %	30	kr	224		100 %	16	0	0	-0,1	0,00	0,00	16	0
	50 %	62	kr	373		70 %	2	262,5	224	-0,1	0,17	-0,02	2	516
	20 %	436	kr	596		50 %	7	437,5	373	-0,1	0,17	-0,02	7	3009
	10 %	11	kr	671		20 %	105,5	700	596	-0,1	0,17	-0,02	104	72561
B	Full price	36	kr	695		10 %	34	788	671	-0,1	0,17	-0,02	33	26308
SUM OLD REVENUE		827	kr	483 717	A (312)	Full price	147,5	795	745	-0,1	0,07	-0,01	146	116396
						100 %	16	0	0	-0,1	0,00	0,00	16	0
						70 %	2	238,5	224	-0,1	0,07	-0,01	2	474
SUM POTENTIAL NEW REVENUE PER PERFORMANCE			kr	603 223		50 %	7	397,5	373	-0,1	0,07	-0,01	7	2764
REVENUE INCREASE PER PERFORMANCE			kr	119 506		20 %	105,5	636	596	-0,1	0,07	-0,01	105	66648
NUMBER OF PERFORMANCES				30		10 %	34	716	671	-0,1	0,07	-0,01	34	1148
TOTAL POTENTIAL REVENUE INCREASE			kr	3 585 180	B (36)	Full price	36	795	695	-0,1	0,14	-0,01	35	28620
AVAILABLE SEAT CAPACITY PER PERFORMANCE				13	SUM		827						814	603223

CATEGORY A - 89% SOLD OUT - 645 NOK - KATJA KABANOVA AND MANON														
Old Section	Old discount	Old usage	Old Price		Section	Discount	Capacity	New price	Old Price	Elasticity	Price increase %	Demand drop %	New demand	New revenue potential
A	Full price	81	kr	645	P (169)	-	169	875	645	-0,7	0,36	-0,25	127	110964
	100 %	86	kr	-	A+ (310)	Full price	101	795	645	-0,7	0,23	-0,16	85	67224
	70 %	46	kr	194		100 %	16	0	0	-0,7	0,00	0,00	16	0
	50 %	93	kr	323		70 %	2	239	194	-0,7	0,23	-0,16	2	399
	20 %	391	kr	516		50 %	7	398	323	-0,7	0,23	-0,16	6	2330
	10 %	5	kr	581		20 %	105,5	636	516	-0,7	0,23	-0,16	88	56175
B	Full price	32	kr	595		10 %	34	716	581	-0,7	0,23	-0,16	28	20367
SUM OLD REVENUE		734	kr	314 837	A (312)	Full price	103	695	645	-0,7	0,08	-0,05	97	67701
						100 %	16	0	0	-0,7	0,00	0,00	16	0
						70 %	2	209	194	-0,7	0,08	-0,05	2	394
SUM POTENTIAL NEW REVENUE PER PERFORMANCE			kr	406 662		50 %	7	348	323	-0,7	0,08	-0,05	7	2301
REVENUE INCREASE PER PERFORMANCE			kr	91 825		20 %	105,5	556	516	-0,7	0,08	-0,05	100	55475
NUMBER OF PERFORMANCES				19		10 %	34	626	581	-0,7	0,08	-0,05	32	1093
TOTAL POTENTIAL REVENUE INCREASE			kr	1 744 670	B (36)	Full price	32	695	595	-0,7	0,17	-0,12	28	22240
AVAILABLE SEAT CAPACITY PER PERFORMANCE				193	SUM		734						634	406662

CATEGORY A - 89% SOLD OUT - 645 NOK - KATJA KABANOVA AND MANON														
Old Section	Old discount	Old usage	Old Price		Section	Discount	Capacity	New price	Old Price	Elasticity	Price increase %	Demand drop %	New demand	New revenue potential
A	Full price	81	kr	645	P (169)	-	169	875	645	-0,1	0,36	-0,04	163	142602
	100 %	86	kr	-	A+ (310)	Full price	101	795	645	-0,1	0,23	-0,02	99	78428
	70 %	46	kr	194		100 %	16	0	0	-0,1	0,00	0,00	16	0
	50 %	93	kr	323		70 %	2	239	194	-0,1	0,23	-0,02	2	466
	20 %	391	kr	516		50 %	7	398	323	-0,1	0,23	-0,02	7	2718
	10 %	5	kr	581		20 %	105,5	636	516	-0,1	0,23	-0,02	103	65538
B	Full price	32	kr	595		10 %	34	716	581	-0,1	0,23	-0,02	33	23761
SUM OLD REVENUE		734	kr	314 837	A (312)	Full price	103	695	645	-0,1	0,08	-0,01	102	71030
						100 %	16	0	0	-0,1	0,00	0,00	16	0
						70 %	2	209	194	-0,1	0,08	-0,01	2	414
SUM POTENTIAL NEW REVENUE PER PERFORMANCE			kr	468 960		50 %	7	348	323	-0,1	0,08	-0,01	7	2414
REVENUE INCREASE PER PERFORMANCE			kr	154 123		20 %	105,5	556	516	-0,1	0,08	-0,01	105	58203
NUMBER OF PERFORMANCES				19		10 %	34	626	581	-0,1	0,08	-0,01	34	1147
TOTAL POTENTIAL REVENUE INCREASE			kr	2 928 336	B (36)	Full price	32	695	595	-0,1	0,17	-0,02	31	22240
AVAILABLE SEAT CAPACITY PER PERFORMANCE				107	SUM		734						720	468960

CATEGORY A - 87% SOLD OUT - 745 NOK - DON GIOVANNI															
Old Section	Old discount	Old usage	Old Price		Section	Discount	Capacity	New price	Old Price	Elasticity	Price increase %	Demand drop %	New demand	New revenue potential
A	Full price	138	kr	745	P (169)	-	169	975	745	-0,7	0,31	-0,22	132	129166
	100 %	35	kr	-	A+ (310)	Full price	94	875	745	-0,7	0,17	-0,12	83	72203
	70 %	27	kr	224		100 %	16	0	0	-0,7	0,00	0,00	16	0
	50 %	44	kr	373		70 %	2	263	223,5	-0,7	0,17	-0,12	2	461
	20 %	434	kr	596		50 %	7	438	372,5	-0,7	0,17	-0,12	6	2688
	10 %	10	kr	671		20 %	105,5	700	596	-0,7	0,17	-0,12	93	64829
B	Full price	32	kr	695		10 %	34	788	671	-0,7	0,17	-0,12	30	23521
SUM OLD REVENUE		720	kr	412 844	A (312)	Full price	96	795	745	-0,7	0,07	-0,05	91	72734
						100 %	16	0	0	-0,7	0,00	0,00	16	0
						70 %	2	239	223,5	-0,7	0,07	-0,05	2	455
SUM POTENTIAL NEW REVENUE PER PERFORMANCE			kr	459 198		50 %	7	398	372,5	-0,7	0,07	-0,05	7	2652
REVENUE INCREASE PER PERFORMANCE			kr	46 354		20 %	105,5	636	596	-0,7	0,07	-0,05	101	63946
NUMBER OF PERFORMANCES				5		10 %	34	716	671	-0,7	0,07	-0,05	32	1102
TOTAL POTENTIAL REVENUE INCREASE			kr	231 771	B (36)	Full price	32	795	695	-0,7	0,14	-0,10	29	25440
AVAILABLE SEAT CAPACITY PER PERFORMANCE				188	SUM		720						639	459198

CATEGORY A - 87% SOLD OUT - 745 NOK - DON GIOVANNI														
Old Section	Old discount	Old usage	Old Price		Section	Discount	Capacity	New price	Old Price	Elasticity	Price increase %	Demand drop %	New demand	New revenue potential
A	Full price	138	kr	745	P (169)	-	169	975	745	-0,1	0,31	-0,03	164	159688
	100 %	35	kr	-	A+ (310)	Full price	94	875	745	-0,1	0,17	-0,02	92	80815
	70 %	27	kr	224		100 %	16	0	0	-0,1	0,00	0,00	16	0
	50 %	44	kr	373		70 %	2	263	223,5	-0,1	0,17	-0,02	2	516
	20 %	434	kr	596		50 %	7	438	372,5	-0,1	0,17	-0,02	7	3009
	10 %	10	kr	671		20 %	105,5	700	596	-0,1	0,17	-0,02	104	72561
B	Full price	32	kr	695		10 %	34	788	671	-0,1	0,17	-0,02	33	26310
SUM OLD REVENUE		720	kr	412 844	A (312)	Full price	96	795	745	-0,1	0,07	-0,01	95	75808
						100 %	16	0	0	-0,1	0,00	0,00	16	0
						70 %	2	239	223,5	-0,1	0,07	-0,01	2	474
SUM POTENTIAL NEW REVENUE PER PERFORMANCE			kr	515 181		50 %	7	398	372,5	-0,1	0,07	-0,01	7	2764
REVENUE INCREASE PER PERFORMANCE			kr	102 337		20 %	105,5	636	596	-0,1	0,07	-0,01	105	66648
NUMBER OF PERFORMANCES				5		10 %	34	716	671	-0,1	0,07	-0,01	34	1148
TOTAL POTENTIAL REVENUE INCREASE			kr	511 685	B (36)	Full price	32	795	695	-0,1	0,14	-0,01	32	25440
AVAILABLE SEAT CAPACITY PER PERFORMANCE				119	SUM		720						708	515181

E Ticket Income DNO&B 2012-2016

TICKET INCOME DNO&B	2012	2013	2014	2015	2016
Opera main stage	kr 47 261 022	kr 45 600 323	kr 39 945 051	kr 49 073 563	kr 48 875 503
Ballet main stage	kr 31 471 300	kr 30 210 705	kr 40 584 043	kr 37 882 485	kr 41 653 090
All other ticket income, excluded tours	kr 20 681 990	kr 19 624 698	kr 15 810 149	kr 20 620 195	kr 29 043 819
SUM	kr 99 414 312	kr 95 435 726	kr 96 339 243	kr 107 576 243	kr 119 572 412
Opera and ballet main stage of revenue%	79.2%	79.4%	83.6%	80.8%	75.7%
Numbers extracted from annual reports in the period 2012-2016					

F Conversation with Tommy Arvinell

The 18th of april we were lucky to have a phone meeting with Tommy Arvinell from the consultant firm Simon, Kucher & Partners. He works in the Stockholm department and specializes in pricing. He talked about the topics customer segmentation and how to exploit customer segmentation by differentiating the prices. He highlighted several important points. First of all the importance of what is the objective of the firm with the pricing strategy. To make a good analysis it is important to get access to customer research data and an oversight over the political situation. He focused

also a lot on the use of discounts. It is important to have in mind that you are actually giving away something when you give a discount, so you have to get something back for it, otherwise it is worthless. You have to ask yourself the question, do we have to discount in this way?

Is the price difference on the tickets correct compared to the value the customers give the different tickets? Can we differentiate more or less? How much do we earn on each customer? He was concerned with exploiting the higher end segments. They have a higher willingness to pay, so to consider options as including different add-ons can increase revenue per customer. This can for example be dinner, alcohol, car services and are presented through the premium option. This is often where the money is. Euro Disney, think of how much it costs to eat in the park. An example from this is industrys that offers flexi tickets for a higher price. How you present the offer to the customers through behavior pricing is also of importance. You can offer several options with differentiated services appealing to different groups.

Surcharges as tickets fees can also provide substantial extra revenue.

When giving out a discount you need to get something in return. There is a price leak with discounts. If you have to change something with the pricing, be very careful. Is senior pricing a good idea? They are not a price sensitive group. Limit discounts in the weekends. 50 NOK extra for weekend or premiere is a very little difference for the customer, it is basically nothing. Just by following intuition everyone can imagine that a premiere is worth much more than just 50 NOK more. Exploit different pricing trhough the week. Very important to look for the black market for tickets. Compare to the leakage market. Expected popularity for the show, look where it has run before. Higher demand then expected, adjust prices. Charge a premium, more expensive in the theater, get a share from that value. Customer club, giving away too much in discount? Soft rewards is the key. Give rewards that gives value to the customer without big price leakage.

If it is not enough availability, do this basic analysis discount leakage hypothesis. Which are the ones we believe that can add revenue?

G Development of Ticket Revenue on Main Stage

DEVELOPMENT OF TICKET REVENUE ON MAIN STAGE										
Year	2012		2013		2014		2015		2016	
CPI Culture and leisure	90,8		94,1		97,1		100		106,5	
OPERA										
Number of performances		84		98		85		91		89
Number of visitors		103558		114055		98596		111051		106978
Seat coverage		93 %		91 %		87 %		92 %		92 %
Price per ticket	kr	456	kr	400	kr	405	kr	442	kr	457
Income	kr	47 261 022	kr	45 600 323	kr	39 945 051	kr	49 073 563	kr	48 875 503
Revenue per performance	kr	562 631	kr	465 309	kr	469 942	kr	539 270	kr	549 163
CPI adjusted price from 2015	kr	456	kr	473	kr	488	kr	502	kr	502
Total loss	kr	-	kr	8 277 278	kr	8 147 852	kr	6 685 564	kr	6 685 564
BALLET										
Number of performances		79		78		92		91		80
Number of visitors		92524		87955		116370		104537		101094
Seat coverage		88 %		85 %		95 %		86 %		95 %
Income	kr	32 471 300	kr	30 210 705	kr	40 584 043	kr	37 882 485	kr	41 653 090
Price per ticket	kr	351	kr	343	kr	349	kr	362	kr	412
Revenue per performance	kr	411 029	kr	387 317	kr	441 131	kr	416 291	kr	520 664
CPI adjusted price	kr	351	kr	364	kr	375	kr	387	kr	412
Total loss	kr	-	kr	1 825 647	kr	3 066 760	kr	2 567 834	kr	-
Numbers from annual reports 2012-2016, CPI from ssb.no - kulturtjenester										

Figure 15: Development of Ticket Revenue on Main Stage

H Indication of Excess Demand: Classified Ads from finn.no

FINN.no Kundeservice (FINN.no Kundeservice)
24. mai, 18:06 CEST

Hei Synnøve,

Vi har dessverre ikke noen direkte statistikk på dette, men dersom jeg søker opp f.eks Billetter til Nøtteknekkeren – Ønskes kjøpt dukker det opp totalt 135 annonser som er publisert på FINN.no igjennom årenes løp. 67 av disse var aktive i perioden mellom oktober og desember 2016

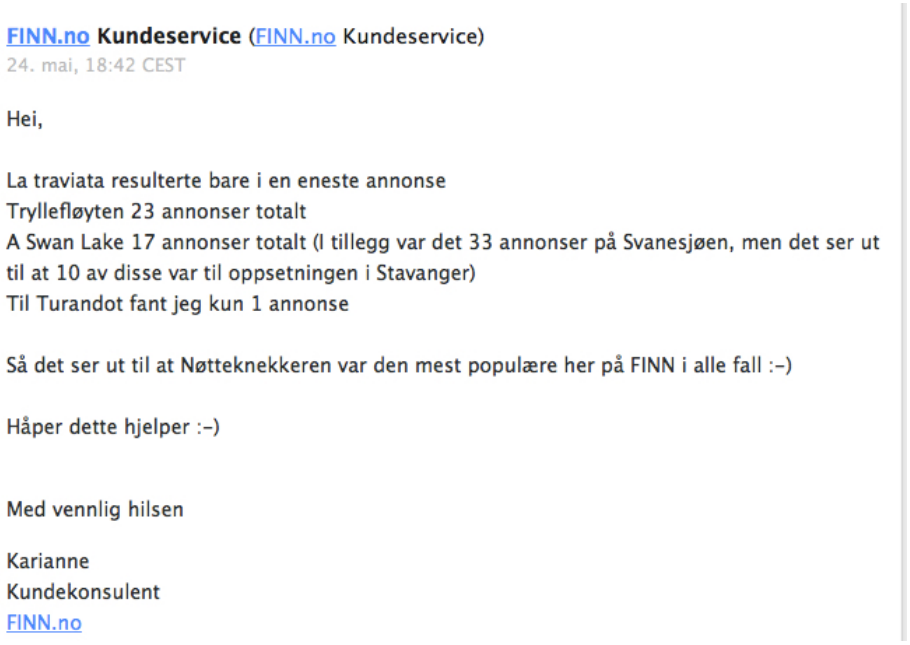
Dersom jeg søker på Billetter Den Norske Opera Ønskes kjøpt får jeg opp et noe mindre antall (totalt 59 stk), men dette er nok fordi mange ikke skriver dette i annonsen, men spesifisere heller hvilken opera de ønsker billetter til.

Dessverre har jeg ikke noe bedre tallmateriale til deg, men håper at dette hjelper dere litt på vei :-)

Med vennlig hilsen

Karianne
Kundekonsulent
FINN.no

Figure 16: Demand for the Nut Cracker at finn.no



FINN.no Kundeservice (FINN.no Kundeservice)
24. mai, 18:42 CEST

Hei,

La traviata resulterte bare i en eneste annonse
Tryllefløyten 23 annonser totalt
A Swan Lake 17 annonser totalt (I tillegg var det 33 annonser på Svanesjøen, men det ser ut til at 10 av disse var til oppsetningen i Stavanger)
Til Turandot fant jeg kun 1 annonse

Så det ser ut til at Nøtteknekkeren var den mest populære her på FINN i alle fall :-)

Håper dette hjelper :-)

Med vennlig hilsen

Karianne
Kundekonsulent
FINN.no

Figure 17: Demand for A Swan Lake, The Magic Flute, La traviata ad Turandot at finn.no

[redacted] via FINN.no i forgårs kl. 14.52
Til: [redacted]
Svar til: [redacted]via FINN.no
2 billetter til Nøtteknekkeren 22. desember 16.30 - selges samlet

Hei [redacted]

[redacted] har sendt deg en melding på FINN.

Hei! Jeg er veldig interessert i å kjøpe billettene dine! Mvh [redacted]

Henvendelsen gjelder 2 billetter til Nøtteknekkeren 22. desember 16.30 - selges samlet
FINN-kode: [redacted]

Send svar på FINN
...eller svar direkte på denne e-posten

Figure 18: Response 1 sales ad finn.no time: 14.52

Figure 19: Response 2 sales ad finn.no time: 14.52

Figure 20: Response 3 sales ad finn.no time: 14.58

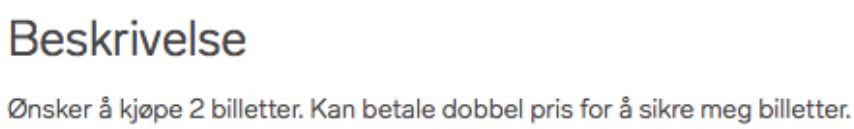


Figure 21: Price willingness at finn.no