Abstract

This study examines revenue management in terms of a framework adapted from Maguire and Rouse (2004). This framework is used to analyse the way revenue management is organised at a large broadcasting organisation. The aim of this analysis is to investigate the structuring of the revenue and cost management efforts. When selling a product or service revenue and cost are usually known and hence the profit margin can be calculated. This suggests that under normal conditions revenue and cost management efforts would be combined. However in the case of the broadcaster, direct interaction between the two is limited to conveying ratings information, commissioning opportunities, and special event analysis. The lack of more direct interaction could partially be due to an implicit link provided by viewer demographic ratings. The programming function strives to maximise these ratings and then the revenue management areas use them to segment the market and maximise the revenues earned. This is consistent with the fact that when the sales team sells the advertising airtime the costs incurred in providing the capacity to do so is already sunk. Thus the performance of the revenue and cost management efforts are better measured in isolation to determine how they individually contribute to the organisations profitability.
1 Introduction

Organisations that use revenue management can structure this function and the cost management function in many different ways. As revenue and cost are the two factors that constitute profit it is of interest to know not only how these functions are structured within an organisation but also why they are structured as they are. It would be natural to think that profit could best be maximised by synchronising the efforts of these functions. Synchronisation means that while the revenue management function strives to maximise revenue it will do so in such a way that the decisions it makes will also aid the cost management function to perform its role. Naturally the reverse also applies. Therefore the aim of this study is to look at what factors may influence the decision of how the two functions are structured.

A case study approach is used to investigate this issue. A large broadcasting organisation was chosen for this purpose. This organisation was chosen because very little has been written about revenue management in this industry. Therefore this study extends the revenue management literature through the exploration of its use in a different setting.

In this study, revenue management is examined in terms of its major components placed within a framework (adapted from one developed by Maguire and Rouse, 2004). This clarification is necessary as the terms revenue management and yield management are often used interchangeably. However revenue management represents more than just the tools and techniques that comprise yield management.

The two strategic levers of revenue management, which are pricing strategies and process management, are discussed within the context of this framework. The components of pricing strategies include the strategy used to price the product and the use of yield management to maximise the revenue earned. Process management components include capacity management, cost management and performance measurement.

Analysis of the broadcasting organisation provides evidence that limited direct interaction occurs between the revenue management areas and the cost management efforts of the programming function. However an implicit link exists between the functions, which occurs due to the unusual nature of the service provided by the broadcasting organisation. This implicit link makes it unnecessary to have any further interaction between the two functions.

The outline of this study consists of (1) detailing revenue management in terms of the framework, shown in Figure 1 (adapted from Maguire and Rouse, 2004), (2) using this framework to examine revenue management at the broadcasting organisation chosen for this study, (3) analysing the way in which this organisation structures its revenue management and cost management efforts, (4) a conclusion is offered as to the possible reason why this structure works so well at this broadcasting organisation, and (5) possible limitations and extensions to the research are discussed.

2 Revenue Management

Revenue and cost are the two components of the profit equation. Organisations have traditionally focused on cost management in an attempt to maximise profits. However revenue management has also emerged as a means to achieve this end.

Revenue management is most applicable to organisations with certain characteristics. These are low variable costs, high fixed costs, perishable inventory, variable demand patterns, ability to forecast future demand, product sold in advance, relatively fixed capacity and ability to segment the market. (Hanks et al. 1992, Kimes 1989)

These characteristics are found in many types of organisations, particularly service organisations, and this has made its use widespread. The use of revenue management has been documented in many types of service organisations including airlines (Kimes and Chase 1998), hotels (Hanks et al. 1992), restaurants (Kimes et al. 1999), rental car companies (Geraghty and Johnson 1997), function space rental (Kimes and Maguire 2001), golf courses (Kimes 2000), barbershops (Chase 1999), and to a limited degree broadcasting organisations (Cross 1997).
Figure 1 outlines some of the components of revenue management. At the top of the diagram the focus is broad but becomes more specific at the lower levels. The starting point of the diagram is the general concept of revenue management. An important definition of revenue management is:

“…the application of information systems and pricing strategies to allocate the right capacity to the right customer at the right price at the right time.” (Kimes and Wirtz 2003, 125)

Revenue management has been defined in many ways but the importance of this one is that it provides a succinct overview of what revenue management entails. Kimes and Chase (1998) state that pricing and duration are the two strategic levers that can be used to successfully control customer demand in order to optimise revenue. However applying the above definition means the strategic lever of duration can be extended to include the ability to effectively manage the process of delivering the service or good to the customer in order to maximise capacity usage. This extension to the strategic lever is termed process management. This is illustrated in Figure 1 along with the strategic lever of pricing.

As Figure 1 illustrates, these two strategic levers interact and affect the use of each other. However the next part of this section is dedicated to giving a brief outline to each of the components of Figure 1.

2.1 Pricing Strategies

Pricing strategies are used to maximise revenue through the manipulation of the price any given customer pays. Shapiro (1968) reinforces the importance of pricing by detailing how groups of consumers are not only conscious of pricing levels but also use price as an indication of quality. This is complicated by the fact that any organisation’s customer base may comprise many different groups. The different groups may have different perceptions of the relative quality of the product and therefore be willing to pay different amounts for it. Revenue management addresses this problem by formulating a pricing strategy and then extracting the maximum yield given available capacity and the number of customer segments. Thus having a good pricing strategy can be vital for the success of revenue management in any given organisation.

2.1.1 Strategies for Service Pricing:

Figure 1 shows under pricing strategies the three that are suggested by Berry and Yadav (1996), namely satisfaction based pricing, relationship pricing, and efficiency pricing. All three aim to convey to the consumer the value that they will gain through the purchase of the organisation’s intangible product. However each strategy uses different mechanisms to convey the products value and therefore each are applicable in different market settings.

Due to the intangible nature of the product many services suffer from consumer perceptions of uncertain quality in that before purchasing a service the consumer may be unsure as to whether they will receive value for money. Where there is high uncertainty in the marketplace the strategy of satisfaction based pricing is appropriate. The aim of this strategy is to reduce the amount of uncertainty in a consumer’s mind regarding the value of the service they will receive. This can be achieved in a number of ways including the use of guarantees of quality of service, pricing only the aspects of the service that the consumer values and limiting the uncertainty of the price by offering a flat rate price before the service is performed.

Upon finding a reliable and high quality provider of a service many consumers will wish to use the same provider the next time they require that service. In this way the consumer gains not only the benefit he or she seeks but they also do not have to expend resources to attain that service. It is undoubtedly profitable for the service provider to do repeat business with existing customers rather than having to search for new ones. Thus relationship pricing aims to maximise the long-term profitability of an organisation by encouraging individual customers to repeat their business. Some of the ways this can be achieved include the use of long-term contracts that
contain incentives for the customer and price bundling through selling more than one service at a single cheaper price.

Efficiency pricing is based on the strategy that Porter (1980) labelled cost leadership. That is the organisation aims to understand, manage, and reduce the costs involved in providing the service to the customer. Through reducing the cost it can then pass on to the customer either some or all of these savings in terms of a reduced price. However it is not sufficient to merely reduce costs. These cost savings must be such that they are unattainable in the short-term by competitors and the price reductions must act as an incentive to attract and retain customers.

2.1.2 Yield Management:

Yield management is the use of techniques to allocate undifferentiated capacity to customers who are willing to pay different prices in such a way as to maximise revenue and thus maximise profits. (Kimes 1989) That is price segmentation will lead to more demand being captured and thus greater revenues being earned. (Hanks et al 1992)

One of the challenges of yield management is to find an acceptable way in which to effectively segment customers into groups that are willing to pay different prices. Of most importance is finding a sorting mechanism that not only differentiates the consumers into different segments but also actively discourages the consumer from trading down to a lower priced segment (Hanks et al 1992). One common way of doing this is to use fences. Fences are booking rules that create barriers between the market segments (Netessine and Shumsky 2002). Discounted airfares provide a good example of how this works. To receive the discount the customer is required to stay over the weekend at the destination before completing the return leg of the flight. In this way business travellers who normally pay full fare would be discouraged to use the discounted rate because they usually wish to return home to their families for the weekend.

Three methods that can be used to perform yield management are threshold curves, Expected Marginal Seat Revenue (EMSR), and mathematical models that use linear programming. (See Figure 1) Threshold curves are one of the most simple yield management techniques available and surprisingly they still offer good results. (Kimes 1989) They work through tracking demand for capacity over the time preceding the use of that capacity. Whether this demand reaches preset levels will be used to determine what prices the capacity is offered at. If demand exceeds the highest preset level then the capacity is only available at the highest price. Likewise if demand falls below the lowest preset level then the capacity is made available at all the different prices in an attempt to stimulate more demand. The combination of good results and simplicity meant that in the past threshold curves gained widespread use by hotels and airlines. However with the increased power and sophistication of information technology, new and accessible revenue management programmes have meant a decline in their use. (Feldman 2000)

Expected Marginal Seat Revenue (EMSR) was originally developed for the airline industry but has since been applied in other service industries, most notably hotels. (Netessine and Shumsky 2002) As the name implies it entails using probability distributions to calculate when the marginal revenue received from waiting for a full paying customer will be less than that from a discount customer who is willing to pay now. This information is used to construct a protection level of capacity for full paying customers and a booking limit of capacity for discount customers.

Mathematical models such as linear programming can be used to extend the EMSR analysis. Weatherford (1995) illustrates, within the hotel setting, how linear programming can be used to incorporate length of stay to produce nested protection levels. It then becomes possible for a discount customer who is wishing to use the service for a longer period to be accepted before a full price-paying customer wanting the service for a shorter period. Weatherford’s analysis shows that incremental revenue can be earned by using this length of stay heuristic as capacity usage increases. He points out that whilst this incremental revenue may not sound
considerable at one or two percent, when it is applied to an organisation with millions of dollars of turnover the incremental gain in revenue can be quite substantial.

2.2 Process Management

The second and equally important strategic lever of revenue management is process management. Process management is used to maximise revenue through optimising capacity usage; minimising the cost of the product or service; and measuring, analysing and evaluating performance to facilitate improvements.

2.2.1 Capacity Management:

Maguire and Heath (1997) outline how capacity can be defined in various ways. The first of these is theoretical capacity. This measure of capacity represents the maximum amount that is theoretically available for an organisation to use in the production of their good or service. This includes capacity that may be unavailable due to many reasons including time used for repairs and maintenance and time given to staff for meal breaks. Another way to define capacity is to use what is known as practical capacity. Practical capacity is calculated by taking the unavailable portion away from theoretical capacity.

Due to revenue management being best suited to organisations with relatively fixed capacity and perishable inventory, Maguire and Heath’s (1997) notion of optimal capacity is the most suited to process management. Optimal capacity is the level at which incremental revenues and incremental costs are balanced to provide a maximised return. Thus the idea of optimal capacity is closely related to the idea of revenue management as both strive towards providing the organisation with an optimal return.

An important element of optimal capacity is that by its very definition it excludes capacity waste. As such it is a useful target to strive for when engaging in process improvements. In service organisations an important element of capacity is often time. Thus optimal capacity incorporates servicing a customer in the minimum amount of time that still allows the customer to gain full utility of the service. This means optimal capacity can be used as a guide to help the service provider take action to eliminate any non-value adding steps in the process of delivering that service.

The effects of time on capacity are easily seen in a restaurant setting with a strategy of serving as many customers as possible (Kimes et al 1998, Kimes et al 1999). The average length of time diners remain at a table dictates the amount of times that the table can be used in one meal setting. During times of high capacity usage the more times that the table is used and therefore the higher the number of diners seated, the higher the revenue earned. However if the diner feels that they have been rushed through their meal then they will not have received full utility of the service. As a result an opportunity cost arises in the potentially lost revenue from the diner not returning to the restaurant in the future. In this situation optimal capacity will balance the need to reduce the average mealtime with the opportunity cost of a reputation for bad service. A restaurant can strive towards reducing average mealtime by managing the process of delivering the meal efficiently by eliminating the waste in the process. This will ensure that the restaurant does not keep the diner waiting at any point during the duration of the service.

2.2.2 Cost Management:

Organisations engaging in revenue management have the potential to benefit through the use of cost management. These benefits are derived in two interrelated ways. The first is the identification and elimination of non-value adding activities. This is particularly true if the organisation is using activity based costing (ABC). Gosselin (1997) states that by undertaking the first stage of the implementation of ABC, activity analysis, an organisation can gain large benefits. Through gaining an understanding of what activities are involved in the process of delivering the product to the customer an organisation can gain an understanding as to what is driving the costs incurred in the process. In this way activities can be streamlined and, following on from the suggestions in section 2.2.1, capacity usage can be increased. This will result in the organisation receiving more revenue without having to increase capacity.
Figure 1 lists the hierarchy of activities associated with cost management (Cooper and Kaplan, 1991). The hierarchy is a useful tool to use when performing activity analysis as it provides insight into the resources consumed within an organisation. Applying the hierarchy to an organisation will allow cause and effect relations between resources and activities to be identified. These cause and effect relations can be used to track the total impact on the organisation of resource utilisation decisions. Measuring total impact on the organisation will enable better informed decisions to be made.

This leads to the second and more obvious benefit of cost management. Streamlining activities implies the elimination of waste. As such the follow on from this should be a direct reduction of total cost. Flint (1998) points out that the use of revenue management in a competitive market may help maintain the organisation’s market share without improving the level of revenue earned. Therefore the containment of total cost may be the only way to guarantee the continuation of profitability. Sheratt (2003) attributes this use of cost management to Southwest Airlines being the only major airline in the United States to make a profit in 2002. This continuation of thirty years of making profits is remarkable given the downturn in the United States airline industry following the September 11 terrorist attack of 2001. Thus, if increased profitability is desired, the correct application of cost management techniques can make an important contribution to this end.

The question that arises is how organisations should structure their cost management function in relation to their revenue management function to best facilitate the maximisation of profits. Dunn and Brooks (1990) argue that organisations should maintain a long-term perspective on profit rather than a short-term emphasis on maximising revenues. They use the example of a hotel to demonstrate how a focus on maximising profits from individual market segments could create greater profits than merely focusing on revenue maximisation. This suggests that a close working relation between the cost management and revenue management functions is essential for profit maximisation. This is examined further in section 4.

2.2.3 Performance Measurement:

A standard means of measuring performance for organisations using revenue management is to calculate the amount of revenue earned per available time-based unit of capacity. (Kimes and Schruben 2002) Hence revenue per available room night (RevPAR) is used by hotels, revenue per available seat mile (RevPAS) is used by airlines, revenue per available seat-hour (RevPASH) is used by restaurants, and revenue per available tee-time (RevPATT) is used by golf courses.

Taking account of the level of capacity usage when measuring performance is an important aspect of these measures (Kimes 1999). Once low and high periods of these measures are identified strategies can be formulated to increase the revenue earned. For instance during low RevPASH periods, restaurant managers could encourage their staff to use suggestive selling to increase revenue. Conversely in high RevPASH periods suggestive selling should not be used and other steps taken to shorten meal duration in an effort to increase table turn rates.

Whilst Lieberman (2003) acknowledges the usefulness of these measures, he also adds caution to their use. His caution is that these types of measures may be affected by external factors unrelated to the performance of the organisation. Thus he advocates the use of performance measures that reflect how well the revenue management function is performing rather than how well the organisation is performing overall.

Lieberman’s (2003) concern is that for revenue management to be a success performance must be measured effectively. If the above measures do not meet this need, he advocates that the organisation develops a custom made way of effectively measuring the impact of the revenue management strategy being employed. To this end he advocates the use of a single measure rather than more complicated multiple measures. However he admits that the development of an effective, generic single measure is still a work in progress.
The framework presented in Figure 1 outlines the more important components of revenue management. Figure 1 shows the two strategic levers of pricing strategies and process management. One element of pricing strategies is to price the services so that they convey to the customer the quality they will receive. Once this has been established then yield management techniques can be used to maximise the revenue gained from available capacity through price manipulation. Process management also supports revenue maximisation. The balancing of the opportunity costs involved with alternative uses of capacity, to achieve optimal capacity usage, can greatly enhance the revenue received. Also cost management can play a part through identifying non-value adding activities to eliminate and thereby not only increasing available capacity but also reducing total cost. Finding an appropriate performance measure that tracks the progress of revenue management is critical for the long-term success of these efforts. This framework and the theory on which it is based will be used in the next section as the basis of analysis when examining how revenue management is performed at the broadcasting organisation.

3 Case Study: A Large Broadcasting Organisation.

3.1 Research Method.

The organisation selected for this study is a large well-established broadcasting company. It was chosen because it is known to have an active revenue management programme.

The initial research consisted of gathering information about this organisation mainly from their Internet site. Once this was complete an interview was conducted with the revenue manager. This one-hour interview was of a semi-structured nature. Five prepared questions were used to guide a discussion of how this organisation implements revenue management. At the conclusion of the interview the revenue manager provided additional information in the form of rate cards and promotional material.

Initially it was intended to also make contact and gather information from someone in the organisation connected with the cost management function. An interview with such a person was made impossible given that the research was being conducted at one of the busier times for the organisation. However the evidence gathered from the revenue manager, as outlined as follows, is sufficient to be able to conduct meaningful analysis. Therefore the study does not suffer as a result of not undertaking this interview.

3.2 The Broadcasting Industry in New Zealand

The broadcasting industry includes both television and radio companies. In New Zealand there are four major television companies. Two of these provide free to air television nationwide. Another company also provides free to air services but only to a limited number of regions within New Zealand. The fourth provides a network of television stations on a pay to view basis. Finally there is a number of small companies that broadcast to specific regions, targeting niche sections of the market not catered for by the other major companies.

The radio section of the industry is particularly competitive. Evidence indicating the competitiveness of the industry is provided by a list of 178 radio stations found on the Yellow Pages website (www.yellowpages.co.nz). The large number of radio stations means that even obtaining the rights to a radio frequency is competitive. One of the large free to air television companies is also a major competitor in this section of the industry. It owns a number of radio stations that target different sectors of the radio market throughout New Zealand. It competes against other large companies that have radio stations that also target different sectors of the market throughout New Zealand. There is also a large number of regional companies that target particular audience demographics within their region.

All of these different television and radio stations receive funding from the government in the form of New Zealand on Air grants that relate to the amount of locally produced content used. Besides this funding the broadcasters have two main streams of revenue. These are selling advertising time during breaks within the programmes and selling sponsorship of programmes.
Both streams of revenue rely on the broadcaster’s ability to promote the product of the company paying for the exposure. As such they compete for the available revenue not only amongst themselves but also with any other form of media that can also provide this service. Examples of these substitute services are newspaper advertising, billboard advertising, and sports team sponsorship.

With the large number of direct competitors and substitute advertising opportunities the competition to secure advertising dollars is fierce. The broadcaster examined in this study is one of the major players within the broadcasting industry. The use of revenue management complements this prominent position enabling the broadcaster to remain competitive.

3.3 Revenue Management at the Broadcasting Organisation.

The characteristics of the broadcaster make the use of revenue management appropriate. Of these characteristics the most important is that the broadcaster has perishable inventory. This perishable inventory is in the form of airtime devoted to commercial advertising or sponsorship. If the relevant advertising time or sponsorship is not sold at the time that the programme airs then the capacity is wasted and the revenue is lost and can never be regained. There is a relatively fixed amount of airtime per hour that can be devoted to commercial airtime. Due to the relatively fixed capacity and perishable nature, commercial airtime is sold in advance.

The situation is further complicated as the demand for the airtime varies depending on the popularity of the programme. As will be seen later in this section, the broadcaster spends considerable time and effort in trying to predict this demand. The demand is broken into segments based on viewer demographic and the commercial airtime is priced according to these demographics.

The characteristics of low variable costs and high fixed costs are also observed at the broadcaster. The costs of purchasing and producing programmes are quite substantial. However these costs that must be incurred are only done so in order to provide the capacity that is needed to produce the revenue. The variable costs involved with the process of selling and providing airtime for advertising and sponsorship are small in comparison to the costs of providing the capacity for this service.

The process of selling the advertising time is formalised. Each quarter the broadcaster releases a block of inventory to the market. For instance, at the time of the interview, at the beginning of June, they had just released the inventory relating to the period September through to December. Potential customers then have approximately one month to place all their requests for advertising time on a programme specific basis. After the cut-off date the submissions are reviewed and allocations of advertising time are made.

Even though customers are required to place orders for the advertising time well in advance the system is one that benefits both the broadcaster and the customers. The benefit to the broadcaster is obvious in that it will have confirmed sales of the advertising time well in advance of the actual time the service is provided. The customer also receives the benefit of reduced uncertainty. This is important because at the time of placing their orders the customers generally have a good idea of what advertising campaigns they wish to run over the period the new inventory is available.

Recently the demand for advertising time has exceeded the available capacity by around thirty percent. As a result customers have not been able to obtain all the advertising time that they require. Customers perceive sponsorship as an ideal substitute for the advertising time that they have been unable to purchase. Hence in times of over demand for advertising time the demand for sponsorship deals will increase. This allows the broadcaster to increase the price of these deals and therefore get more revenue from sponsorships.

The broadcaster offers two types of sponsorship. The first is where the sponsors logo or brand is associated with the programme they are sponsoring. This may be in the form of an ongoing association, for programmes that are an ongoing series, or a one off sponsorship for a stand-alone programme.
The second type of sponsorship is known as “production funding”. This is where the sponsor’s products receive exposure through being used and actively promoted throughout the programme. This type of deal is more expensive for the sponsor but they gain the additional benefit, above having their logo or brand associated with the programme, of product placement within the programme.

The broadcaster’s pricing strategy is most accurately classified as relationship pricing (see Berry and Yadav (1996) classification). The broadcaster is clearly interested in maximising the business opportunities with its existing customers. One relationship pricing technique is to enter into a contract with the customer that offers them an incentive to increase the amount of business they conduct with the organisation. The broadcaster uses contracts that offer the customer discounts. These discounts are based on how much the customer will be spending with the broadcaster and the share of the customer’s overall advertising budget this represents. The customer is thus encouraged to do more business with the broadcaster in order to receive a greater discount. The discounts are particularly valuable to the customer as they are applied to all of their purchases regardless of whether it is high demand or low demand inventory.

Not all of the discounts given are in the form of reduced rate card prices. The sales team have a whole layer of discounts they can offer the customers including one that is known as “bonus airtime”. Dependent on and in relation to the amount of money the customer spends they will receive free airtime from the broadcaster. This bonus airtime can be placed anywhere on the programme schedule with the exception of a select few programmes. Thus the bonus airtime is a valuable discount to customers particularly considering it can be used during certain peak hour viewing when the normal prices are at their highest.

Another example of building long-term relations with customers is the sponsorship deals. They are usually sold on a yearly basis but the existing sponsor will always be offered the opportunity to continue the sponsorship deal before it is offered to the market. In this way long-term relations are formed between the broadcaster and the customer that may last for many years.

The broadcaster also uses the relationship pricing strategy of price bundling in relation to special events. Whilst these special events may last for only a short period they represent a special challenge, as large amounts of airtime will be diverted to them from normal programming. Therefore rather than trying to sell individual units of inventory to a customer they sell packages that include a predetermined number of advertising slots for a combined cheaper price. This not only benefits the customer through providing a cheaper deal but also enables the broadcaster to easily fill the low demand advertising time during these special events.

This emphasis on long-term relations also extends to the broadcaster’s suppliers. Historically the broadcaster has had good relations with the big overseas production houses. They are consequently often given first right of refusal when new programmes become available. This provides the broadcaster with a competitive advantage through being able to acquire programmes with good viewer ratings.

Viewer ratings are an important component of the broadcaster’s revenue management. When advertisers purchase airtime they do so with the aim of having their products exposed to as many potential customers as possible. Thus the most desirable time to advertise their products will be during programmes that have high ratings amongst the viewer demographic that their product targets. This means that rather than using formal booking rules as fences the broadcaster is able to use viewer demographic ratings as a sorting mechanism to segment its market.

The process of creating their rate card is very market orientated and relies on the segmentation via viewer demographic. In the first step of the process the revenue management team obtains information from the programming department detailing the dates and times on which programmes will be shown. The rate card is set long before the programmes air and therefore it is not always possible to know exactly what programme will be shown. To be able to set an appropriate rate, in this situation, it is sufficient to specify peak times, off-peak times and viewer demographics.
The next step of the process involves making an estimate of what the ratings will be for a number of different viewer demographics. These estimations are based on historical data, how well the programme rated if already aired in other countries, what the broadcaster’s competitors have programmed at the same time, and how well the programme will appeal to different viewer demographics. Once these estimations have been calculated the price will be set based on the highest viewer demographic rating. Thus the market will be segmented, as the advertisers that are trying to reach that particular viewer demographic will be the most willing to pay the price the broadcaster has set.

The usual length for which an advertisement screens is thirty seconds. Therefore the prices that appear on the rate card are set at thirty second equivalent rates. However it is not uncommon for advertisers to air fifteen, sixty, or even ninety second advertisements. If this is the case the advertiser will pay a proportionate amount of the price that appears on the rate card. Also the final price the advertiser will pay is affected by the discounts already negotiated with the sales team.

When the rate card is set only about eighty five percent of the inventory is released for sale. The other fifteen percent, drawn from the parts of the programming schedule that are expected to be in high demand, is held in reserve until after the initial sales process is complete. As the original eighty five percent is usually oversubscribed there is still excessive demand for advertising time. The broadcaster uses this excessive demand to sell the remaining fifteen percent of inventory at a much higher price. In this way revenue is maximised for the available inventory.

Capacity for the broadcaster comprises the amount of time available for advertising. The capacity available for advertising is relatively fixed. The broadcaster is subject to government regulations and monitoring that limits the amount of non-programme time allowed per hour. This is complicated by the fact that the non-programme time also includes promotions of other programmes, schedules of programmes to follow the current one, and anything else that is not part of the current programme.

Thus the broadcaster constantly strives to obtain optimal capacity (Maguire and Heath, 1997). The broadcaster is forced to make trade offs between using the non-programme time available for advertising or for other purposes. If the decision is taken to use the available capacity for commercial advertising then revenue is earned immediately. However if the decision is made to use the time to promote other programmes, then the ratings will increase for these programmes and as a result higher prices can be charged for the advertising time during them. Hence a balance must be struck between using the available capacity to maximise the current revenue and using the available capacity to increase future revenue.

The level of optimal capacity is thus the amount of non-programme time that should be devoted to advertising. Past experience has meant that the broadcaster has devised a set format to achieve what it believes to be optimal capacity. Whilst the set format is used differences still remain in that during peak demand time the running of promotions is limited to fifteen seconds compared to the normal thirty second promotions. At strategically chosen times they will run even longer versions of the promotions. However in times of high demand such as that currently faced, the level of optimal capacity will be higher with less non-programme time diverted from commercial inventory.

Measuring the increase in performance from the promotion of programmes is an area in which the broadcaster conducts considerable analysis. This analysis consists of comparing the amount of promontional minutes devoted to a programme with the subsequent ratings for that programme. The results generated highlight areas that have worked well and others where improvements are required. The revenue manager, during the interview, highlighted a particular example where a programme had rated extremely well in the United States of America and thus was heavily promoted by the broadcaster. Initial analysis suggested that this programme had the potential to rate very highly. Based on this analysis, the price of advertising time during the programme was increased quite significantly from what would normally have been charged at
that time. Unfortunately when this programme went to air it only attracted about half the ratings that were expected.

Failure to accurately predict ratings reflects badly on the broadcaster, as customers do not receive the full utility of the service for which they are paying large amounts of money. Therefore measuring performance and conducting meaningful analysis is of great importance to the broadcaster. If the mistakes made in the past can be used to improve performance for the future, this can have the effect of increasing revenues and thus profits in the long-term. Thus the performance measurement at the broadcasting organisation is in line with Lieberman’s (2003) belief that such efforts should be directed at isolating the effects of the revenue management programme and not at measuring the overall performance of the organisation.

3.4 Structure of Revenue Management at the Broadcaster

Figure 2, shown above, outlines some of the functions involved in the revenue generating process. As is shown in Figure 2 the process involves two stages but this will be discussed later in Section 5. Also shown in Figure 2 are the flows of information between the different functions. From this it can be seen that some of the organisational functions maintain closer contact than others.

Revenue management at the broadcaster comprises three separate areas. These areas are Pricing and Inventory; Sales Systems Development; and Sales Research. Pricing and Inventory have as their main responsibility the rate card process. The Sales Systems Development area looks after all the systems that help the sales people do their jobs. Finally the Sales Research area has the responsibility of providing the sales team with information that will help them to make sales. This information includes programme ratings, programme demographics, and case studies showing how well sponsorships have worked for other established customers.

Research is a function that is closely related to the sales research area of revenue management. Revenue management at the broadcaster relies heavily on analysis that is carried out on past events to assist in determining how they will set their rate card in the future. In particular, the revenue manager highlights how, as demand for advertising time has been high recently, they expect this trend to continue through at least to the end of December. However being able to set higher rates, in response to the high demand, is a decision not taken lightly. If the high demand does not materialise then the high prices will result in unsold inventory and lost revenue. Therefore to help try and confirm this they conduct a large amount of research prior to releasing their rate card to the customers.

The specifics of this research include conducting market research amongst their potential clients. Part of the market research involves talking to advertising agencies to get their views on how well the advertising market will perform. Another part involves talking directly to specific advertisers, usually who are major clients of the broadcaster, to get their views as well. Questions they will ask of these advertisers include whether they are expecting to spend a lot of money on advertising, what new products they plan to release in the near future, and are they planning any new advertising campaigns?

A large amount of research is done around the economy. The New Zealand economy has been performing very well recently and there is a belief that it will continue to grow. If this turns out to be true then the amount of retail spending will also increase in line with the economic growth. The amount of retail spending has a direct influence on the amount of money spent on advertising. Hence it is important for revenue management purposes to understand how the economy is performing in order to be able to accurately predict the best level to set their rates.

The revenue manager, in the interview, stressed that the majority of times, through the use of this research, they are able to get the level they set their rates right. However the market and economy can sometimes be unpredictable. As such on occasions they have not managed to set their rates at the correct levels with the result of losing some potential revenue. This again stresses the need for the broadcaster to learn from their past performance, through performance
measurement, in order to improve future prospects. Hence research and performance measurement are two vital areas of support for the revenue management areas.

Another function that is closely related to the revenue management areas is the sales team. The sales team is comprised of about eighty people who have the job of promoting and selling the advertising time and sponsorships to the potential customers. They also perform the important role of feeding back information from the advertising agencies and major advertisers to both the revenue management areas and the research area.

Overall the broadcasting organisation implements revenue management effectively. They use relationship pricing to extract as much revenue from existing customers as possible. This is complemented with the effective segmentation of their market using viewer demographic ratings that enable the customers willing to pay the most to derive the greatest benefits from exposure to their target audience. Also they constantly monitor the performance of their operations in an attempt to gain the optimal capacity utilisation. The combined effect of this is to maximise revenues earned and thus to maximise profit.

Supporting this implementation of revenue management are the research function and the sales team. The research function constantly feeds both the sales research area and the sales team with vital information that enables both to fulfil their respective tasks. The sales team uses the rate card developed by revenue management to effectively sell advertising and sponsorship to customers. The sales team also constantly supplies information they have gathered during completing their own tasks to the revenue management areas and research function to enable more efficient analysis of the market to be carried out. However whilst, these functions compliment and strengthen each other’s performance, one function that does not actively interact with the revenue management areas is the programming function.

4 Structure of Revenue and Cost Management.

This section is concerned with the links between revenue management and cost management at the broadcaster. Cost management is applicable to all processes within an organisation. However this study examines cost management in terms of the revenue generating process depicted in Figure 2. In this process the programming function is responsible for the use of the organisations resources to provide broadcasting of programmes. Hence the cost management examined in the broadcasting setting is that which is related to the programming function.

The programming function uses the organisations resources to either produce or purchase programmes, which are two distinct areas. If the broadcaster has decided to produce a programme then the first area, commissioning, is responsible for organising domestic production houses to make the programme. The second area, programming, is responsible for purchasing and the scheduling of programmes. To this end they use both the programmes that are supplied by the commissioning area and the programmes they source from overseas production houses.

Interaction between the revenue management areas and programming function is not extensive. One example of interaction occurs between the programming area and pricing and inventory in the form of a flow of information regarding the choice and scheduling of programmes. As detailed in section 3.3 above, this is the first step in the process to set the rate card. However, whilst this flow does include information on how well the programmes are likely to rate, no information is transferred with regard to the cost of the programmes.

Another link is between the sales team and the commissioning area. Through their contact with the advertising community the sales team will often find a particular advertiser that wishes to subsidise production of a programme to gain exposure for its product. The advertising product dictates the type of programme best suited for the production funding sponsorship. However if the type of programme is not currently made the sales person provides commissioning with information about what is needed for the sponsorship deal to be satisfied. Commissioning will use this information to approach the production community to ascertain an estimated cost for
this type of programme. The commissioning team will then be able to evaluate whether or not it is a good idea to proceed with producing the programme, given the additional funding from sponsorship and that they must work within budgets.

This informal process has produced some high rating programmes for the broadcaster in the past. As a result the broadcaster has been able to establish not only long-term sponsorship deals that had not previously existed but also to increase its rates during these programmes due to the higher ratings.

The broadcaster recognises the need to focus more on this type of sponsorship. The revenue management areas and sales team are aware of other advertisers in the market who are interested in pursuing these types of arrangements. However they do not have the opportunity to do so as a programme suitable for their products is not currently available. It is thus felt that giving the revenue management areas and sales team a more formalised role in commissioning would result in more opportunities to increase profits.

In rare circumstances there is a necessity for the revenue management areas and programming function to work closely together. Occasionally specific programmes made by the international production houses are exceptional events. The costs of bringing such programmes to this country are extremely high. Therefore the programming team will involve the revenue management areas in the decision making process to provide analysis of how much revenue could be expected to be generated during the screening of the programme. If it is felt that the programme is one where a lot of revenue will be generated then this may prompt a decision to go ahead with the purchase. In this analysis consideration will also be given to incremental revenue received through promotion of other programmes during the non-programme time whilst screening the event. This is of particular importance given the large audiences these types of events usually attract. However other factors will also influence the decision such as what will be the consequences if their competitors manage to obtain the programme? Due to the broadcaster being lucky to cover the cost of the programme with the revenues earned these strategic factors play an important role in the decision making process.

There are no other explicit links between the revenue management area and programming function other than those mentioned above. One possible factor that may influence the observed separation of functions is that the market in which the broadcaster operates provides an implicit link between the functions. The broadcaster is very market orientated; its level of viewer ratings is fundamental to its success or failure. The level of viewer ratings the broadcaster receives is related to the types of programmes it uses. Simply put, the more popular the programmes that the broadcaster offers to its audience, the higher the ratings it receives. In turn the higher the ratings, the more the demand for advertising time. The higher demand gives the broadcaster the opportunity to charge higher rates and therefore earn more revenue.

The programmes broadcast drive the ratings and the level of resources consumed and therefore the level of cost incurred. Therefore the programming function’s efforts are directed at maximising the ratings per dollar spent. This means the budgeted amount of money for programming should be spent in a way that maximises ratings. By maximising ratings from each dollar spent the revenue that can be earned will also be maximised.

This maximisation of ratings per dollar spent implies simplicity. However the situation is complicated by opportunity costs that exist due to the competitive nature of the broadcasting industry. When deciding on whether to purchase a programme, part of the decision process involves analysing what the impact would be if their competitors acquired that programme. Therefore very expensive programmes will be purchased on the basis that it would be even more costly for the broadcaster, in terms of lost ratings, if their competitors purchased it. Thus strategy makes up a heavy component of the decision of where their resources should be placed.

This type of strategic decision also includes what balance of domestic and international programming to offer. Programmes purchased from the overseas production houses are quite often the best rating programmes. These programmes are always less costly to purchase than
domestically produced programmes. However some of these domestically produced programmes also generate high ratings and therefore, even though more costly, will be purchased on the basis that not purchasing them will be far more costly in terms of lost ratings.

The revenue manager gives the example of a domestically produced programme that appears during peak time every day of the week. This programme rates extremely well in the first half of the week when audience levels are high. During the second half of the week the audience levels drop off and so do ratings as a result. Rates are reduced in accordance with this drop in the ratings. However the costs of producing this programme are the same regardless of the night of the week. Therefore the profit averaged across the week is lower in comparison to an international programme that costs less to purchase and is only shown during peak time. On the other hand dropping the domestically produced programme is also not an option because the broadcaster’s closest competitor offers a similar programme at the same time every night. Thus if the broadcaster dropped the programme it would lose substantial ratings through its audience changing to the competitor. This would also give the competitor a chance to promote its programmes to a new audience, possibly leading to an even greater loss of ratings.

Thus ratings offer an implicit link between the functions. The link is implicit in that it exists without the necessity of having formal interaction between the functions to establish or maintain it. The programming function focuses on providing the maximum ratings at the least cost. In turn the revenue management areas use these ratings to maximise the revenue earned. Therefore even though there is no explicit working relation between the two functions they are in fact working towards the same goal of maximising profitability.

The implicit link provided by ratings ensures that no other links, beside those mentioned earlier in this section, are needed between the two functions. The unusual nature of the service makes the need for further explicit links unnecessary. In normal situations, when selling a product, the revenue and cost of the product is known. As a result the profit margin can be calculated. This is also the case when selling a simple service because revenue, cost, and hence profit can be calculated on an hourly basis.

The broadcaster faces a more complicated situation. As mentioned, the cost management being examined revolves around providing programmes. These programmes are not however the service that is sold. Instead these programmes provide the capacity that is necessary for the service, of advertising, to be provided. Hence a distinct separation between revenue and cost exists. As mentioned above ratings act as an implicit link between revenue and cost by making the capacity appealing to potential customers.

The separation that exists between revenue and cost means the broadcaster does not routinely calculate profit for each programme. This is because an accurate measure of revenue earned by each programme is not available. For instance when the sales team sell advertising time to customers there is a whole layer of discounts they can offer, some of which have already been discussed. An example of this is an advertisement placed using the customer’s allocation of bonus time that appears during a high rating programme. This bonus time will have been earned from advertisements placed during other programmes. Therefore rather than representing no revenue being earned this actually represents substantial revenues being made elsewhere. Other programmes are also promoted during high rating programmes. These promotions take up time that could be used to earn revenue from paying customers. However the promotions could lead to higher ratings elsewhere and hence a greater rate that can be charged for advertising time. Thus the promotions run during a programme do not represent a loss of revenue so much as incremental revenue earned elsewhere.

Therefore if the broadcasting organisation were to calculate profitability for an individual programme this may be misleading due to all the subsequent effects on revenue being ignored. This implies that, in line with Lieberman’s (2003) argument, the broadcaster is better off measuring performance for revenue management in terms of how successful it is in increasing revenues and measuring their success at cost management separately.
There is limited interaction between the programming function and revenue management areas. That which does exist appears to be in the form of information flows that are absolutely necessary for the respective functions to perform their tasks. However the implicit link of ratings does ensure that both functions are working towards the same goal of maximising profits. The very nature of broadcasting means that the programmes themselves do not represent the service that is for sale but rather, they are the vehicles that ensure capacity is available. In fact the broadcaster does not try to routinely measure profitability for individual programmes as too many complications exist that make an accurate calculation impossible. However the question still remains as to whether it would be better for the broadcaster to structure their cost management and revenue management functions in a way that promotes closer interaction? This question is addressed in the next section.

5 Summary and Conclusion

Revenue management comprises the two interrelated strategic levers of pricing strategies and process management. Pricing strategies include the tools and techniques of yield management. Process management combines capacity management, cost management, and performance measurement to streamline the delivery of the product to the customer.

This study is an investigation of revenue management at a large broadcasting organisation. Of particular interest is how this organisation structures its revenue management and cost management efforts. There is limited evidence of direct interaction between the two at the broadcasting organisation. One direct interaction took the form of a flow of information from the programming team to the revenue management areas regarding the programme schedule and potential ratings. Another direct relation is the sales team bringing sponsorship possibilities to the commissioning team for consideration. The final type of direct relation that occurs is when an exceptional programme is under consideration for purchase, the revenue management function will be directly involved in the decision making process.

One factor that explains this lack of direct interaction is an implicit link between the two functions in the form of ratings. The programming area is concerned with maximising viewer ratings for every dollar they spend. Given these expected levels of viewer ratings the revenue management areas then sets about maximising the revenue that can be obtained. Thus beyond the direct interaction that already occurs, as mentioned above, no other direct relations between the two is needed.

Another factor that helps explain the lack of direct interaction is the limitations on performance measurement. Due to the layers of discounts that the sales team offer to customers and additional revenue generated through promoting other programmes it is relatively impossible to calculate the revenue generated by a single programme. Thus it is far better for the organisation to measure the efforts of the revenue management areas in terms of impact on revenue rather than on the overall profitability of the organisation.

Combining these two factors with the nature of the service sold tends to suggest that the broadcaster is better off by having only an indirect link between the revenue management areas and programming function. The programming function is concerned with providing the best rating programmes per dollar spent. However this only provides capacity for the real service being sold. The real service being sold is advertising time within these programmes. Therefore in essence when the organisation comes to conduct the selling of this service the costs involved are already sunk.

In this way the cost management and the revenue management functions are dealing with separate parts of the same process, as seen in Figure 2. Cost management can be seen as the first step in the process of revenue management in that they are responsible for providing programmes that result in ratings. As long as the programming function concentrates on providing the best ratings they can for the given budget then the revenue management areas have little to offer to this step of the process.
Likewise when revenue management commences the second step of the process, selling the advertising airtime, the programming can offer very little beyond providing a guide as to what the ratings are likely to be. The costs incurred in the first step have already been committed and therefore they can be viewed as sunk. As such the revenue management function is better to concentrate on maximising revenue across all programmes rather than concentrating upon the more expensive programmes.

Finally with this separation between the functions, each function will better be able to concentrate on what they are expected to achieve. This is then aided by the ability to measure performance for each function rather than as an organisation as a whole. As each function is responsible for different parts of the overall process it is important that their performance is analysed individually in order to find ways to strengthen the whole process. Judging by the broadcaster’s ability to maintain a profit level expected by its owners, as outlined in the broadcaster’s annual report, this separation of functions is achieving that aim.

The major limitation of this study is that an interview was not conducted with anyone from the cost management function. Therefore it is lacking in the finer details of how the cost management function operates. It is conceivable that the organisation may still use and benefit from some of the concepts discussed in section 2.2.2 above. For instance activity analysis and the hierarchy of activities may still be of benefit to the programming function in identifying non-value adding activities that when eliminated will result in a gain in profitability. However the lack of these finer details does not detract from the major findings of this study and therefore this limitation is not of concern.

It is also possible that other factors influence the lack of direct relations between the revenue management and cost management functions. One possible factor is how integrated the information systems that these two functions use. Another possible factor could be where these two functions are located within the organisation's structure.
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Figure 1: Revenue Management Framework

Revenue Management

Pricing strategies

Service Pricing
- Satisfaction Relationship Efficiency

Yield Management
- Threshold curves
- Expected Marginal Seat Revenue
- Mathematic models
- Linear Programming

Process Management

Capacity Management

Cost Management

Performance measurement
- Hierarchy
  - unit
  - batch
  - product
  - facility

Two way interaction

(Source: Adapted from Maguire and Rouse, 2004)