Final Report

BRITISH WATERWAYS

PRICING OF PRIVATE BOAT MOORINGS

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OXERA

Strictly confidential

Executive Summary

British Waterways (BW) commissioned OXERA to review the way in which it sets prices for private boat moorings, and its method of making decisions about new moorings investments. In undertaking this review, OXERA examined a wide range of BW documents, including the current pricing guidelines to managers.[1] OXERA also undertook two surveys: the first involved interviewing service managers, who either make or are involved in BW's mooring pricing and investment decisions. The second consisted of a survey of private mooring prices in selected case-study locations; these prices were then compared with BW's prices in the same areas. Finally, OXERA undertook a competition audit of BW's current policies (which assesses whether current BW practices are likely to raise competition policy concerns) and reviewed alternative pricing mechanisms.

The results and conclusions from the study can be divided into three main areas, which are outlined below.

- *Current pricing policy*—the review of current pricing policy highlighted that the current guidelines issued by BW are largely adhered to and that, in general, managers find such guidelines useful. The most important parts of the process for pricing mooring were found to be the size of waiting lists, the location of alternative providers, and the quality of the mooring (eg, facilities available). The least important factors were differentiating between customer types and providing discounts due to disruptions. Overall, managers tend to focus on increasing the supply of moorings in response to excess demand, rather than increasing price.

  As indicated by the response to pricing guidelines, OXERA's analysis of the current approach to pricing characterised it as being a form of scarcity pricing, also sometimes referred to as pricing to the market. However, the case studies and the mooring prices survey indicated that there is evidence that the current approach may be leading to systematic underpricing of BW moorings relative to private-sector moorings in similar locations. This is evidenced by long waiting lists at BW moorings sites, and an apparent systematic divergence between BW prices for moorings and private mooring provider prices in the region of 13% to almost 60%.

- *Competition audit*—the competition audit highlighted that BW's moorings operations are likely to be found to be dominant (ie, the company would be deemed to have market power) in some geographical locations for plausible geographical and product market definitions. This suggests that in the downstream market for the supply of moorings to the public BW needs to exercise caution in its pricing policy in those locations (see future pricing policy below). BW also needs to be careful not to attempt to constrain the supply of moorings by either BW or third parties. However, the review of current pricing policy did not find evidence suggesting such practices occur within BW. Nevertheless some care will need to be taken when making statements that acknowledge that pricing is below cost—although there is no intent to gain from predatory pricing, and the references implicitly highlight the cost in question is the total cost of operating the waterway,

[1] BW (2003), 'Annual Review of Long Term Moorings' Pricing: Managers Briefing for April 2004 Revisions', November.

competitors could highlight such statements as indicative of an unfair approach to pricing in the downstream market.

The competition audit highlighted potential areas of greater concern regarding BW's practices in the upstream market for the supply of services that enable moorings to be operated. There seemed to be discrimination in terms of the effective canal-access fees charged to different online mooring providers, and between online and offline mooring providers, which is not driven by cost differentials. For example, the interviews with service managers indicated that offline canal-connection fees were generally negotiated on a case-by-case basis, and the British Marine Federation (BMF) agreement for a 9% connection fee was not necessarily adhered to. A possible way to alleviate these concerns would be to operate a tariff scheme, whereby negotiation over fee levels is largely removed and BW's connection charges are set on an *ex ante* basis and published. Raising a greater proportion of costs from some groups rather than others may not necessarily raise competition concerns; however, if the impact of the pricing policy was to raise barriers to entry for third-party providers in the moorings market, and BW's own retail prices do not cover these costs, this could be an example of a margin squeeze.

- *Future pricing policy*—OXERA reviewed alternative pricing methods (both cost- and demand-based) and found that scarcity pricing is the most appropriate pricing method for BW to adopt in its moorings business. This is similar to the current method, but, as noted above, it is likely to require prices to rise in the short run in many areas, since BW seems to be pricing below the market-clearing price.

  In locations where there is substantial competition from private mooring firms, BW is likely to be able to use this form of pricing without raising competition concerns. However, it will need to be particularly vigilant in locations where it is likely that the firm would be deemed dominant in a competition investigation, since it could be accused of charging excessive prices Consequently, if BW uses scarcity pricing, it needs to be careful not to constrain the supply of BW or third-party moorings. Continuing the current policy of encouraging all types of moorings, both BW and non-BW in all locations, wherever possible, is likely to be sufficient to alleviate this concern.

Contents

1. Introduction

British Waterways (BW) commissioned OXERA to review the way in which it sets prices for private boat moorings, and its method of making decisions about new moorings investments. The two principal aims of this review are to:

- analyse the way in which BW makes decisions about mooring prices and investments, and if necessary, put forward recommendations for changes to this process, while adhering to the constraints of available resources and information;
- undertake a critical review of the current level of mooring prices in various parts of the country with regard to two sets of concerns:
  - customer concerns that prices may be set too high;
  - commercial moorings-operator concerns that prices may be set too low, stifling private-sector activity and investment. In addition, the study should consider non-price barriers to entry, for example, the potential for BW to exercise a first-mover advantage in mooring developments, or via the representations that BW makes through the planning process.

The review will only consider BW's managed-moorings pricing policy, and not that of British Waterways Marinas Limited (BWML), which is now a separate company, although it is a wholly owned subsidiary of BW. BW has issued a protocol document, which indicates that, while BWML is a wholly owned subsidiary, it has separate management, and prices its moorings separately from BW. The document also sets out that BW intends to treat BWML in the same manner as any other private provider of marinas.

1.1 Structure of paper

The paper is structured as follows:

- section 2 critically reviews the current practice use for setting moorings prices. This section also outlines the results of a survey of service managers who are involved in setting prices;
- section 3 presents four case studies of various locations on BW's network to gain further insight into the issues facing the moorings business;
- section 4 presents a competition-policy audit of the moorings business;
- section 5 discusses several alternative pricing strategies that BW could adopt in place of its current policy;
- section 6 makes recommendations for changes in BW's price-setting methodology, and the level of BW's current mooring fees.

2. Review of Existing Practice

This section describes and analyses the existing practice of long-term moorings price-setting and the supply of moorings. First, the recommended procedure is examined. Second, the practical application is reviewed, using the results from the survey of regional service managers.

2.1 Recommended procedure

2.1.1 High-level principles

BW's moorings pricing policy is informed by its Framework Document, issued by Defra, which states that:

> Whenever practical it [BW] should directly charge its customers for benefits received consistent with prevailing market rates and only resort to grant-in-aid to fund activities where, in agreement with the Secretary of State, there are wider social benefits or it is impractical or not cost effective to charge directly for services provided.[2]

This phrasing implies that BW should charge the market-clearing price for its moorings. Such a pricing policy would not take account of the costs that BW incurs in providing mooring—ie, it would not necessarily result in cost-reflective prices. Instead, the prices would be based on the availability of substitutes to BW moorings, boaters' willingness to pay, and boaters' willingness to switch to alternatives. As is discussed in the competition audit (in section 4), such a policy of demand-based pricing poses no problems in a competitive market, but may raise competition concerns, if BW has market power.

In statements such as this, BW may wish to differentiate between the total costs of running the waterway and the incremental costs of operating the moorings business. Moorings income cannot be expected to meet the full costs of operating the waterway, but can be expected to meet their own incremental costs, and to make a contribution towards total costs.

BW has stated that:

> [Moorings] Prices cannot be based on cost because the cost of maintaining and running the network, and thereby enabling moorings, far outweigh any reasonable return that can be achieved through mooring and licence fees. […] Our [BW's] prices must therefore reflect market demand. In interpreting market demand and setting our prices we shall have due regard for our wider responsibilities to encourage greater numbers to enjoy boating and associated activities on our waterways.[3]

These statements are consistent with BW's Framework Document, but may raise competition concerns, if BW has market power.

2.1.2 Detailed guidance for managers

Mooring prices are reviewed annually, with new prices taking effect from April each year. This task is the responsibility of service managers, who are considered the 'owners' of the pricing-review

[2] Defra (1999), 'Framework Document for British Waterways', February, para 2.6.

[3] BW (2003), 'Annual Review of Long Term Moorings' Pricing: Managers Briefing for April 2004 Revisions', November, Appendix 3.

exercise undertaken each year. The service managers are supported in this process by general managers, who provide guidance and strategic perspective, and operating directors, who are responsible for ensuring the proper moderation of prices across their business units and between group boundaries. A set of guidelines, common to all BW moorings, helps the managers when making decisions.[4]

The current guidelines for pricing mooring space recommend that prices should reflect the 'local customer base and market conditions'.[5] Service managers should follow a ten-step set of guidelines when setting prices. These steps address issues on both the demand and supply side of the moorings market, and are shown in Table 2.1.

Table 2.1: Ten-step mechanics of price setting

Step		Description and comment
1	Market definition	Define which customers might want to moor within your business unit. The guidelines suggest using a radius of approximately 40 miles around each mooring site, since 80% of boaters tend to live within this distance of their mooring
2	Locating other mooring providers	Identify and locate competing moorings
3	Strengths, weaknesses, opportunities and threats (SWOT) analysis	Identify the competitive strengths and weaknesses of each site
4	Changes in quality of BW moorings	Changes in the facilities at a mooring site affect the ability to charge
5	Increases in supply	Increases in supply draw customers off waiting lists and away from BW sites, reducing BW's ability to charge
6	Historical occupancy and waiting-list levels	Long waiting lists imply that demand is exceeding supply; therefore, suggesting that BW can charge more for existing moorings without losing customers
7	Different customer types	Different customer types will exhibit different elasticities of demand to price. Low-income boaters are likely to be more sensitive to price increases; as such, it may help to maximise revenue to constrain price rises at locations where this type of user makes up a large proportion of the moorers
8	Disruptions and other factors reducing a mooring's value	Disruptions may reduce BWs ability to charge, as they lower the quality of the mooring
9	Phased price increases	Large price rises may need to be phased over time, otherwise existing users may become alienated
10	Wider strategy	Mooring prices are part of the wider business-unit economic value creation strategy, and therefore should be set with regard to this

Source: Based on BW (2003), 'Annual Review of Long Term Moorings' Pricing: Managers Briefing for April 2004 Revisions', November, p 4.

The first step of the guidelines suggests that the manager should define the geographical area from which the demand for boat moorings is likely to be drawn. BW believes that 'approximately 80% of boat owners live within 40 miles of their mooring and 60% live within 20 miles', although some areas draw from a wider geographical area, notably from London. As such, this definition informs

[4] BW (2003), 'Annual Review of Long Term Moorings' Pricing: Managers Briefing for April 2004 Revisions', November.
[5] BW (2003), op. cit., p 4.

the demand (eg, who is likely to rent BW mooring space?) and supply analysis (eg, where and who are BW's competitors?).

- *Demand side*—the geographical definition of the market should be used by managers to identify the likely sources of demand for their mooring space. Historical occupancy data and waiting lists should also be examined for each site undergoing the price review. Long waiting lists are likely to imply that demand is exceeding supply at the current price, while significant numbers of voids are likely to imply that supply is exceeding demand at the current price. The known price elasticity of customers on a mooring site should also be taken into account.

- *Supply side*—once the geographical market has been specified, managers should research all other mooring providers' prices and facilities. To aid this process, BW keeps a database of all known mooring operators. Managers should use this tool, and supplement it with their own local knowledge. The strengths and weaknesses of both BW's and competitors' sites should be assessed. All sites offer a varying mixture of accessibility and facilities, which will affect boat users' willingness to pay for a particular site.

  Increases in the supply of moorings, usually due to the opening of new marinas, offer boaters a greater choice of mooring locations. It is likely that increases in supply will reduce the price that BW can charge for a given mooring.

The guidelines are not supposed to be a prescriptive formula, because ultimately 'new prices are the [regional] Business Unit's value-judgement on the basis of best-evidence and experience'.[6]

2.1.3 Complaints

There is a three-stage procedure in the event of a complaint by a customer against a moorings price rise.

- *Internal complaints procedure part one*—this is a formal written complaint to the BW general manager. The general manager and the service manager investigate the complaint and make a response within 20 working days.

- *Internal complaints procedure part two*—the complainant can accept the decision of the general manager, or can request their case to be considered by a director who is not directly responsible for the personnel or business unit that is subject of the complaint. A response should be made within 20 working days.

- *Complaint to the Waterways Ombudsman*—if the complainant has exhausted BW's internal complaints procedure and remains unhappy with BW's decision, there is recourse to the Waterways Ombudsman. The Ombudsman will consider whether there has been maladministration on the part of BW—ie, whether BW's actions were inefficient or improper. The Ombudsman cannot investigate situations that 'have been, or are being considered by a court, or otherwise involve issues of legal interpretation'.[7] BW has agreed to be bound by the Ombudsman's decisions.

[6] Ibid.
[7] The Waterways Ombudsman (2003), 'The Waterways Ombudsman', information leaflet, August.

2.2 Procedure in practice

In order to evaluate how the recommended procedure was being carried out in practice, a series of telephone interviews was undertaken with service managers and other staff in all ten of BW's regions. In advance of the telephone interviews, the managers were sent a questionnaire; this formed the basis for the interview. Appendix 1 contains a copy of the questionnaire, and Appendix 2 contains the list of respondents. This section presents the results of those interviews.

2.2.1 Detailed guidelines for managers

This section examines the service managers' responses to the questions and subject areas in sections A, B and C of the questionnaire (see Appendix 1). This section is divided into bullet points dealing with the main areas of the survey.

- *Usefulness of the managers' briefing guide*—service managers seem to have found the managers' briefing note reasonably useful; however, it appears to have served as more of a guide than a rigid process that must be followed. Some respondents gave relatively low rankings to the usefulness of the note, and how closely they followed its recommended procedures. This seemed to be because they were following these or similar principles already; consequently, the note did not result in a significant improvement of their procedure.

  - In answering the question, 'How useful, overall, did you find this briefing note?', respondents gave an average answer of 3.2, where 5 indicated very useful, and 1 not useful.

  - Very few of the managers followed the ten-step process 'to the letter'; however, most managers used it as a detailed guide. In answering the question, 'How closely did you follow the ten-step 'mechanics of price setting' process?', respondents gave an average answer of 3.4, where 5 indicated following the guide to the letter, while 1 using it as a rough guide.

Table 2.2 presents the average importance attached to each of the ten steps in the managers' briefing note. The table highlights that locating other mooring providers, changes in quality of BW moorings, market definition, and historical occupancy and waiting-list levels are the four most important parts of the price-setting process. It also shows that identifying different customer types is the least important factor.

Table 2.2: Importance of the ten guiding steps in the final pricing decision

Step	Factor	Average level of importance: 1=not very important, 5=very important[1]	Ranking[2]
6	Historical occupancy and waiting-list levels	4.3	1
2	Locating other mooring providers	4.2	2
4	Changes in quality of BW moorings	4.0	3
1	Market definition	3.9	4
10	Wider strategy	3.4	5
3	SWOT analysis	3.3	6
5	Increases in supply	3.0	7
9	Phased price increases	2.8	8
8	Disruptions and other factors reducing a mooring's value	2.6	9
7	Different customer types	2.1	10

Notes: [1] This is calculated as the un-weighted mean average of all responses. [2] The ranking is derived solely from the average level of importance data; interviewees were not asked to rank the ten factors by importance.
Source: OXERA survey of BW managers.

Each factor is reviewed individually below in order of the importance given to it by the service managers.

- *Historical occupancy and waiting lists*—most respondents did not consider that historical-occupancy figures were of great relevance to mooring-pricing decisions, since this is a historical figure. However, they did consider that waiting lists were the most important in the pricing decision.
  - All but two regions indicated that they had a mooring occupancy of 90% or more. Some respondents highlighted that the only vacancies were frictional ones caused by customers moving sites, or new customers taking over from old. The remaining two (North West and Wales & Border Counties) had occupancies of approximately 80%.
  - Eight of the ten regions would respond to waiting lists by increasing prices, and nine of the ten would respond by increasing the supply of moorings. The only region that would not respond by increasing moorings was London: the respondent for this region felt that it is severely constrained geographically in terms of its ability to increase supply. Several of the respondents that would try to increase supply noted that the supply response might be limited since geographical, planning, and BW policy (eg, limits on online moorings) constraints might prevent this response in some locations. For most respondents, the best response was an increase in supply, with a price increase being the second-best response.
  - All respondents indicated that it would take considerably longer to add offline and marina moorings than online moorings. All but two regions (Scotland and East Midlands) stated that it usually takes more than two years to add offline moorings. Six regions asserted that it takes less than one year to add new online moorings, while the other four indicated it takes less than two years.

- Only three of the respondents used SAP as the primary source for keeping track of mailing lists of current moorers and those on the waiting lists. Common complaints were that SAP was not sufficiently accurate, and that it was particularly difficult to use for those only on waiting lists. However, two of the respondents currently not using SAP are in the process of switching over to it.

- *Location of other mooring providers*—overall locating other mooring providers was considered the second most important factor when determining prices. This high ranking suggests that the availability of alternative moorings acts as a constraint on the pricing power of BW.

  - Nine respondents indicated that there were more than 20 alternative mooring providers within their region. Some regions have significantly more than this; for example, the South West has in excess of 100 third-party mooring operators, and the West Midlands around 66. One respondent (North West) had between 10 and 20 alternative moorings suppliers.

  - BW's market share of moorings varies considerably both between and within BW regions. In at least one location, BW is the sole supplier (Scottish lowlands); while in at least one other BW seems to hold less than 10% of the market (South West).

  - Table 2.3 outlines the data that the regions hold on their competitors. Some respondents found it difficult to collect price information, and had to impersonate a prospective boater making an enquiry; those that engaged in this practice were uneasy about its ethicality. The total number of berths operated by competitors, and the facilities that they offer are easier to hold data on since these factors do not change very often. However, berth occupancy was very hard to collect data on, and the data that was collected usually consisted of simply knowing whether a facility was full.

Table 2.3: Importance of quality factors in pricing

Information type	Number of regions holding this data
Price	8
Numbers of berths	9
Berth occupancy	2
Facilities/customer service	8

Source: OXERA survey of BW managers.

- *Changes in quality of BW moorings*—while quality factors were important to all interviewees, most felt that these aspects of quality did not *change* very often, or to a significant degree, except when sites were upgraded or renovated. Therefore changes in quality were relatively unimportant in the pricing decision. However, the absolute level of quality for the site did matter, and managers try to achieve some level of consistency across their region so that sites with similar facilities in similar locations are priced similarly.

  - As Table 2.4 shows, all four of the aspects of quality highlighted in the survey were felt to be important determinants of the price that could be charged for a site. The

results suggest that the availability of facilities and security are the two most important. Discussions with interviewees indicated that security was a particularly important factor in most urban locations, more so than in rural ones.

Table 2.4: Importance of quality factors in pricing

Quality factor	Average level of importance: 1=not very important, 5=very important[1]
Facilities (eg, pumpout)	4.1
Security	4.0
Location on the waterway	3.7
Attractiveness of the local environment	3.4

Source: OXERA survey of BW managers.

Interviewees also highlighted other factors that they felt were important quality aspects of a mooring site: the most important was felt to be access, which included the availability of car parking, or proximity to buses/trains.

- *Market definition*—Managers felt that defining the market for a particular site was an important part of the pricing process; however, most did not engage in detailed analysis of the location of moorers from different sites.
  - Several respondents had problems understanding the question, 'How much price variation is there across your region (comparing like for like in terms of facilities and mooring-site type)?'; consequently, the numerical answers to this question are hard to interpret. However, answers to other questions gave the impression that there was significantly more than a 10% difference in price for like-for-like moorings in different locations within all of the regions. Therefore, it is reasonable to presume that respondents would have answered that there was more than a 10% difference in price across the region, if they had understood the question.
  - Respondents seem to possess differing levels of information about the distance that mooring customers travel to their mooring sites in their region. All respondents noted that it would be possible to calculate this using the SAP database (eg, using mapping software); however, none had done so. Those that did have detailed information had done it on an ad hoc basis.
  - All but two of the respondents had examined prices in neighbouring regions as part of the price review. The primary purpose of this was to ensure that there were not substantial differences in price for similar moorings at the interface between regions. Of the two regions that did not examine neighbouring regions prices, one (Scotland) felt it was not relevant since their region does not have borders with any others, while the other (South East) felt that it should have been done, but was not undertaken due to time constraints.
- *Wider strategy*—not all respondents cited wider strategy concerns, as some felt that the other nine steps in the pricing process covered all the relevant factors.

- Concerns about wider strategy were raised by six of the ten respondents. The key issue seemed to be to ensure that that year's mooring-price increases were not seen in isolation—ie, considered in context of BW's broader policy and objectives—and that they were consistent with the long-term objectives of BW—ie, that the mooring price changes did not harm either BWs revenues, BWs reputation, and the popularity of boating in the long run.

- *SWOT analysis*—the majority of BW regions did not carry out a formal SWOT analysis, but discussions indicated that they did examine a range of factors that could be considered to constitute a SWOT analysis, even if it was not carried out in a written form. Several respondents felt that undertaking a full SWOT analysis for each mooring site was too cumbersome given the number of moorings they had to administer.

  - Only three of the ten respondents used a standard list of strengths and weaknesses list for each of their mooring sites. Furthermore, each region seemed to have a different approach, and consequently a different list of factors.

- *Increases in supply*—increases in the supply of moorings were regarded as a relatively unimportant factor in determining prices. However, discussions with managers suggest that this result is largely caused by the limited additional supply that can be provided in many areas together with long waiting lists for BW moorings. If waiting lists were shorter and/or new moorings easier to provide, this factor is likely to be considerably more important.

  - Respondents gave a wide range of answers for the length of time ahead that they tried to consider increases in supply. Respondents seem to fall into two groups: those that did not believe increases in supply mattered very much because of the long waiting lists on BW mooring sites, and those that tried to consider mooring supply increases as far ahead as the data was available.

  - When respondents consider supply increases, they all examined both BW and non-BW supply.

- *Phased price increases*—phased pricing increases were viewed by many respondents as a distinct second stage in the setting of mooring prices: ie, a new mooring price would be determined, and if this was substantially above the previous price, a phased introduction might then be considered as the mechanism for achieving it. This suggests that consideration of the phasing of pricing increases could be removed from the ten steps, and made a second stage of the analysis.

  - All respondents indicated that they would use phased pricing increases to introduce a substantial price raise, although several noted that this practice did not occur on a wide range of moorings.

  - Five of the ten respondents indicated they would only offer phased rises for existing customers; the other five would offer the phased price rise to all customers. Only offering the phased increases to existing customers seemed to be primarily motivated by a desire to reduce opposition and complaints from moorers.

  - Price rises usually seem to be phased for a maximum of three years, although the respondent for the South West indicated that there was an instance of price rises being phased over five years. In this case, the phased price rise path was also indexed to the RPI.

- *Disruptions*—disruptions were generally not considered to be very important in the moorings-pricing decision made by managers. Many interviewees referred to BW's craft user licence conditions, which state that disruptions are inevitable on a canal network that is over 200 years old, and that users will not receive rebates for these disruptions; it seems the service managers are applying a similar principle to moorings pricing. In spite of this, around half of respondents stated that they did offer some very limited discounts in cases of exceptional disruption. Examples of this include situations where BW works have significantly overrun their advertised timescale, or in circumstances where a moorer is required to move to an alternative mooring for a period.

  - Five of the ten respondents did offer some discounts for disruptions. Furthermore, several of the other respondents noted that disruptions might be taken into account when setting moorings prices; for example, prices rises might be constrained for one year to take into account the disruption caused to moorers.

- *Distinguishing different customer types*—this was considered to be the least important part of the ten-step process. Indeed, many respondents did not believe that the profile of customers at particular locations was of relevance in the pricing decision.

  - Four of the ten respondents offered discounts to particular customers types; however, these were extremely limited in nature, often only applying to charity boats, or for disabled access sites.

  - Five of the ten respondents have mooring wardens. The majority of these do not appear to be on contracts, although most respondents indicated that they were in the process of formalising the relationship by issuing a contract and charging for the mooring.

A final area of discussion about price-setting regarded the prompt payment discount.

- *Prompt payment discount*—all but one of the respondents looked at the full/undiscounted price when making their comparison with the market. The notable exception was the Yorkshire region, which used the discounted price, since they realise that this is the price that most mooring customers pay. However, they (and most other regions) did note that, in their view, when customers are choosing a mooring, they base their decision on the undiscounted price, since this is the most prominently publicised price, and are often surprised to receive the 10% discount for prompt payment.

  A wide range of views was expressed about whether a prompt payment discount was still necessary. Some respondents thought that it needlessly reduced BW's income, while others noted its usefulness in recouping some of the additional costs involved in extracting payment from evaders.

2.2.2 The supply of moorings

This section examines service managers' responses to the questions and subject areas in sections D, E and F of the questionnaire (see Appendix 1).

- Adding and removing online moorings

  – Table 2.5 indicates that the most important factor when determining whether deciding to add or remove online moorings are the views of boaters. The impact on towpath visitors is a lesser consideration, although it becomes more important at 'honeypot' sites. Interestingly, the impact of online moorings on the profitability of other sites was not considered very important.

Table 2.5: Factors affecting the addition and removal of online moorings

Factors	Average level of importance: 1=not very important, 5=very important[1]
The views of boaters? (Eg, the impact of online moorings on navigation speed, etc.)	3.8
The views of towpath visitors? (Eg, possible dislike of long lines of boats?)	2.4
The impact of the online moorings on the profitability of other sites (Eg, removing online moorings to ensure boats transfer to offline sites with vacancies)	2.0

Source: OXERA survey of BW managers.

- *Investment in offline mooring and new marina facilities*—third parties must pay a canal-connection fee to BW when connecting their mooring facility to the waterway network. It is possible that this could act as a barrier to entry, if it were set excessively high.

  – The responses to the questionnaire indicated a wide range of procedures is being used to determine the canal-connection fee for third-party offline mooring operators. Some regions adopt a standard procedure, usually based around the BMF agreement. Others only use the BMF agreement when dealing with BMF members, and negotiate bespoke agreements with non-BMF members.

- *Supply of moorings by third parties*—BW receives both informal and formal enquiries from third parties wishing to set up new marina and mooring facilities. The interviews suggest that BW is consistently very encouraging in all regions towards these applications, offering suggestions for improvement and highlighting technical difficulties that may be encountered with particular plans.

  – All the regions comment on planning applications for new marinas and other mooring developments by third parties. Some noted that while BW is a statutory consultee for such developments, some planning authorities were not routinely notifying them of applications. All regions are generally positive about planning applications, generally only arguing against them where operational (eg, water supply) or capacity issues (eg, overcrowding on the canal) are important.

2.3 Discussion

Analysis of the detailed procedure used to price and invest in BW moorings raises the following issues.

- The managers' guideline is useful, but is seen and used as a guide, rather than a procedure to follow to the letter.
- Waiting lists are a key determinant of pricing.
- The primary response to excess demand is to increase supply, and only then, increase price.
- The absolute level of quality is important, but changes are rarely made to the level of quality.
- The SWOT analysis may be too cumbersome as it is currently set up.
- Clearer guidance on when to offer discounts (eg, for disruptions) may be necessary.
- Differentiating customer types is not an important part of the practical pricing procedure.
- BW is generally very encouraging towards third parties providing new moorings supply, reinforcing its own efforts to increase supply instead of allowing mooring prices to rise.
- There seems to be inconsistency across BW regions regarding the level and terms of the canal-connection fee; this could act as a barrier to entry for new marina operators.

3. Case Studies

This section examines four areas of BW's waterways in more depth in order to gain a clearer understanding of the moorings market, the role of BW within it, and the impact of its pricing and investment decisions. The case studies draw on the relevant interviews carried out in the first stage of this study, further research undertaken to compare BW and private mooring provider prices (see Appendix 4 for more details of the mooring prices survey), and information and data supplied by BW. The four areas examined are presented below.

- *Scotland*—Scotland presents an interesting contrast to the rest of BW's network. The canals in the highlands of Scotland cater to seafaring vessels; consequently, there is a substantially different demand for moorings from the other regions in the BW network. In the lowlands, there is not a history of inland boating; as a result, demand for moorings is low.

- *London*—despite having some of the highest prices in the BW network, demand still exceeds supply, resulting in substantial waiting lists and spillover to neighbouring BW regions.

- *South West, focusing on the Kennet and Avon*—since its restoration, moorings on the Kennet & Avon canal are in great demand; before restoration, demand was considerably lower. This case study would provide a useful example of how BW's mooring-investment strategy operates, and how the pricing structure is currently being used to deal with the high level of demand.

- *North West*—demand for mooring space is more limited in the North West region. Consequently, this region displays some of the lowest mooring rates on the BW network. This makes this area a useful comparison with the London and South West regions, with their higher levels of demand.

3.1 Scotland

BW's Scotland region is unique among BW's regions, as it operates a completely separate network, with no interface with other BW regions. The character of demand is Scotland is also different, since inland boating is not a popular pastime. Instead, sailing and other boating activities at sea are much more popular.

The Scotland region needs to be analysed in two parts, since there is a fundamental difference between the highland canals, which cater to seafaring craft, and the lowland canals, which cater for narrowboats.

3.1.1 Highland canals

Comprising the Caledonian canal, and the Crinan canal, the Highland canals are different in character to Scotland's lowland canals and the majority of BW's network in England and Wales. The Highland canals are extremely wide (circa 10m) and generally carry seaworthy vessels, as opposed to canal-bound narrowboats. Indeed, most traffic on the Crinan canal is seagoing vessels, avoiding the 160km trip around the Mull of Kintyre.

The characteristics of demand and proximity to the sea mean that BW's moorings in the highland canals compete with sea-based marinas and other mooring sites. So, while BW may operate all of

the moorings on the two canals, these moorings compete in a much wider market with a large number of alternative suppliers.

Table 3.1: Market-share estimates for the moorings market in Scotland

Location	BW moorings	Non-BW moorings	Market-share estimate from interview (%)
Highland	210	0	less than 20
Lowland	135	0	100

Sources: Gareth Maeer, BW, Supply-Capacity-Projected spreadsheet, August 2003; and interview with Jim Stirling.

3.1.2 Lowland canals

The lowland canals comprise the Forth and Clyde canal, Union canal and Monkland canal. The Falkirk wheel, opened in 2002, now links the Forth and Clyde, and Union canals, allowing navigation from the centre of Edinburgh to the centre of Glasgow. The lowland canals are similar in nature to the canals in the majority of England and Wales, being around 3–4m wide.

Because there is not a long history of inland boating as a popular pastime, boating on the lowland canals competes with a wide range of alternative leisure activities, not least sailing. Consequently, the current moorings policy in the lowlands is focused on keeping prices low to build up business and help to popularise inland boating as an activity. At present, there is still a reasonable range of locations available that can be used for additional online moorings; as such, the response to waiting lists is generally to increase supply, and not to increase prices.

3.1.3 Comparison with commercial moorings

As there were no private moorings listed on BW's moorings database for the Scottish region, it was not possible to carry out a comparison between BW and private mooring prices.

3.2 London

BW operates around 100 miles of canals and rivers in London, together with around 110 acres of docks. The canals are predominantly urban in nature, although they do pass through parks and other green locations.

There is an extremely high level of demand for long-term moorings in the London region of BW. This has resulted in BW's moorings operating at 100% of its capacity. Demand is so great that the practice of selling boats with their moorings is believed to be commonplace. BW's policy on moorings prohibits this, but it is difficult to enforce. This extent of this practice means that there are virtually no voids or frictional vacancies caused by long-term moorings changing hands in the London region.

There is also a high level of demand for residential mooring, which is presumably largely driven by the high costs of home ownership in London, resulting in the waterways acting as a form of spillover residential location.

Due to geographical constraints, and the large numbers of moorings already in place in the London region, it is very difficult to add any new supply of moorings. This limits the supply response that both BW and third parties can make to the high level of demand.

Interestingly, given such high demand and limited supply, the London region does not raise prices in response to waiting lists, instead focusing effort on adding supply whenever possible. The lack of price increases is particularly notable in residential moorings, since if BW's residential-mooring locations compete in the housing market, BW is not maximising the value of its rental income.

The limited supply of moorings in London helps to push large numbers of boaters into neighbouring regions, including the South East.

Table 3.2 shows that BW operates around a third of the long-term moorings in London. Despite this reasonably low market share, the interview with the service manager for London indicated that none of the third-party moorings providers are seen as a specific constraint on BW's pricing. This may be because BW is pricing below the market-clearing price, while third parties are pricing at the clearing price, giving BW significant leeway to increase prices and not be affected by competitors. BW may wish to examine this issue in more depth to gain a better understanding of why prices are being set in this manner.

Table 3.2: Market-share estimates for moorings market on London canals

Location	BW moorings	Non-BW moorings	Market-share estimate from interview (%)
London	695	1389	20 to 39

Sources: Gareth Maeer, BW, Supply-Capacity-Projected spreadsheet, August 2003; and interview with Amanda Moring.

3.2.1 Price comparison with private moorings

The evidence from the mooring prices survey, shown in Table 3.3, supports the suggestion that BW is pricing below market-clearing rates in the London region. The table compares the weighted average prices of private and BW moorings on the Lee and Stort Navigations. It indicates that BW moorings are significantly cheaper than those offered by private providers; BW would need to increase the price of its moorings by approximately 59% from the discounted price, or by 44% from the undiscounted price to match private mooring prices.

Table 3.3: Average prices charged for online, layby and basin moorings on the Lee and Stort Navigations

	Number of observations in sample	Weighted average price (£)	Increase required to achieve parity with private moorings (%)
Private moorings	6	112.46	n/a
BW moorings	7	70.52	59
BW moorings, excluding 10% prompt payment discount	7	78.36	44

Notes: Prices are per metre, per year, and include VAT. Averages are calculated by weighting by the number of boats able to moor at each location.
Sources: OXERA Private Moorings Survey, and BW (2003), 'Long Term Moorings Price 2003/04'.

The figures in Table 3.3 effectively treat all the moorings included within the sample as homogenous, since no adjustments are made for quality. Thus, if private moorings systematically include better facilities, or are found in more desirable locations on the navigations, these figures may overestimate the difference between the price charged by BW and private moorers. This caveat applies all the moorings comparisons shown in this section.

3.3 South West

The South West incorporates the Bridgewater and Taunton canal, the Gloucester and Sharpness canal, the River Severn, and the Kennet and Avon canal. The Kennet and Avon canal is examined in greater depth because it offers an interesting example where the restoration of a canal has resulted in a substantial increase in demand for boating and consequently long-term moorings.

3.3.1 Kennet and Avon

The Kennet and Avon canal runs across southern England from Reading to Bristol. It is an extremely attractive and, therefore, popular waterway. The canal received substantial investment during the 1980s and was fully re-opened in 1990. After the canal was reopened, demand rose substantially, and BW identified the need for substantial price rises on its moorings. The 60 to 80% price rises were generally phased over three years.

Despite these substantial price rises, demand is still in excess of supply on the Kennet and Avon at the current price levels, meaning that the only vacancies are frictional ones (ie, churning). The response of the South West region to waiting lists is to both increase prices and seek to install new supply; however, there are few remaining locations that are suitable for moorings, making supply increases difficult. The South West region believes that demand is so great that, despite the national moratorium on new online moorings, the South West has installed some anyway.

BW's South West region is very active in trying to encourage third-party developers to bring new offline moorings onstream. Indeed, the South West region organises seminars to outline the possibilities to local landowners.

Table 3.4: Market-share estimates for moorings market on the Kennet and Avon

Location	BW moorings	Non-BW moorings	Market-share estimate from interview (%)
Kennet and Avon	218	1286	less than 20

Sources: Gareth Maeer, BW, Supply-Capacity-Projected spreadsheet, August 2003; and interview with Michael Goodenough.

3.3.2 Price comparison with private moorings

Tables 3.5 and 3.6 compare the prices for BW and private moorings on the Kennet and Avon, and Gloucester and Sharpness canals respectively. The data for the Kennet and Avon canal indicates that BW may be pricing up to 23% lower than private mooring companies.

Table 3.5: Average prices charged for online, layby and basin moorings on the Kennet and Avon

	Number of observations in sample	Weighted average price (£)	Increase required to achieve parity with private moorings (%)
Private moorings	8	86.41	n/a
BW moorings	19	70.29	23
BW moorings, excluding 10% prompt payment discount	19	78.11	11

Note: Prices are per metre, per year, and include VAT.
Sources: OXERA Private Moorings Survey, and BW (2003), 'Long Term Moorings Price 2003/04'.

In contrast, the data for the Gloucester and Sharpness canal indicates that BW's mooring pricing, excluding the 10% prompt payment discount, is approximately the same as those for private moorings. This suggests that eliminating the prompt payment discount would result in BW charging at, or close to, the market-clearing price on the Gloucester and Sharpness canal.

Table 3.6: Average prices charged for online, layby and basin moorings on the Gloucester and Sharpness

	Number of observations in sample	Weighted average price (£)	Increase required to achieve parity with private moorings (%)
Private moorings	5	82.32	n/a
BW moorings	13	72.73	13
BW moorings, excluding 10% prompt payment discount	13	80.81	2

Note: Prices are per metre, per year, and include VAT.
Sources: OXERA Private Moorings Survey, and BW (2003), 'Long Term Moorings Price 2003/04'.

3.4 North West

The North West region has six canal groups within it: the Peak Forest, Leeds and Liverpool, Lancaster & Ribble Link, Ashton, Huddersfield Narrow, and Rochdale canals. Demand for moorings is relatively low on most of the network, with the notable exception of the Lancaster canal and Ribble Link. This 42-mile stretch of canal is very popular as it is largely rural, and has attractive scenery.

The North West region holds a database of all the mooring sites (groups of moorings) on the North West's network. Table 3.7 provides some descriptive statistics from this database. The data shown is for mooring sites, rather than for moorings; as such, it understates the proportion of moorings operated by third parties, since a greater proportion of these sites are marinas, while BW's sites are almost exclusively online moorings.

Table 3.7: Descriptive statistics for mooring locations in North West

	North West region as a whole	Lancaster canal and Ribble Link only
BW permanent sites	65	21–1 is a marina
BW visitor sites	79	12
Private sites	44	16–6 are marinas
Other sites (eg, charities)	21	5
Total	209	54

Source: Spreadsheet from Debbie Lumb.

This bias is highlighted in Table 3.8, which shows that non-BW moorings make up around two-thirds of the long-term moorings market on the Lancaster canal, with BW providing around a third.

Table 3.8: Market-share estimates for moorings market on the Lancaster canal

Location	BW moorings	Non-BW moorings	Market-share estimate from interview (%)
Lancaster	362	634	around 1/3

Sources: Gareth Maeer, BW, Supply-Capacity-Projected spreadsheet, August 2003; and interview with Debbie Lumb.

Overall, for the North West region, around 77% of BW's mooring capacity is used. However, this rises to 100% on the Lancaster, and most mooring sites on this canal have waiting lists.

3.4.1 Price comparison with private moorings

The moorings survey returned sufficient results from both the Lancaster, and the Leeds and Liverpool canals to allow comparisons between private and BW mooring prices to be made. Table 3.9 suggests that BW moorings prices would need to be increased by 26% from the discounted level to achieve parity with private moorings. While this suggests BW is underpricing its moorings, the results for the Lancaster canal should be treated with additional caution since all except one of the private moorings consist of marinas, while all bar one of BW's moorings comprise online, layby and basin moorings. Therefore, the results could simply reflect differences due to the better facilities and security offered at marinas relative to other types of moorings.

Table 3.9: Average prices charged for all moorings on the Lancaster

	Number of observations in sample	Weighted average price (£)	Increase required to achieve parity with private moorings (%)
Private moorings	6	57.40	n/a
BW moorings	17	45.44	26
BW moorings, excluding 10% prompt payment discount	17	50.49	14

Note: Prices are per metre, per year, and include VAT.
Sources: OXERA Private Moorings Survey, and BW (2003), 'Long Term Moorings Price 2003/04'.

Due to a larger set of survey results, the price comparison for the Leeds and Liverpool canal excludes marinas, comparing only online, layby and basin moorings. These results suggest that BW may be substantially underpricing moorings on this canal; prices may be able to be raised by nearly 60% from the current discounted levels.

Table 3.10: Average prices charged for online, layby and basin moorings on the Leeds and Liverpool

	Number of observations in sample	Weighted average price (£)	Increase required to achieve parity with private moorings (%)
Private moorings	8	69.88	
BW moorings	24	44.65	57
BW moorings, excluding 10% prompt payment discount	24	49.61	41

Note: Prices are per metre, per year, and include VAT.
Sources: OXERA Private Moorings Survey, and BW (2003) 'Long term moorings price 2003/04'.

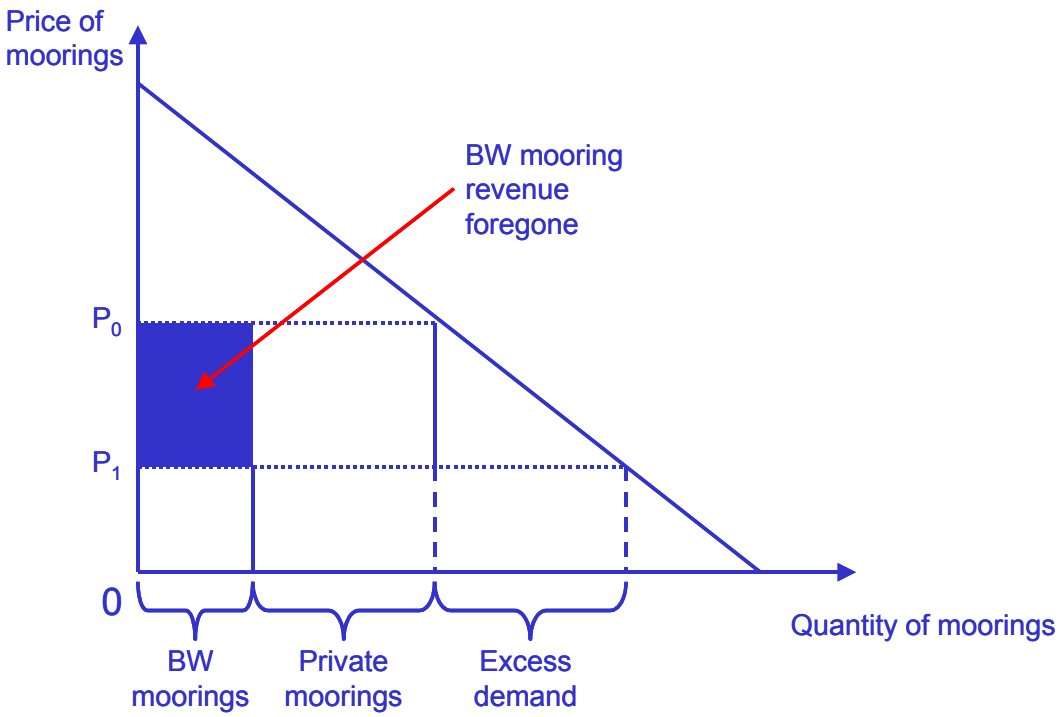
3.5 Lessons from case studies

There are three key lessons from the case studies.

- *BW's response to high levels of demand*—the case studies highlight that BW's response to high levels of demand is largely focused on increasing the supply of moorings, and not on increasing the price of those moorings. An advantage of this is that it is likely to ameliorate competition-policy concerns, since it does not seem plausible that BW is seeking to constrain the supply of moorings. A disadvantage is that it means BW is not generating as much revenue as it could from moorings in high-demand locations. This leads on to the second key lesson.

- *BW seems to be charging less than the market-clearing price*—evidence of sustained long waiting lists for BW moorings, combined with the price comparisons shown above, are both consistent with the conclusion that BW is pricing below the market-clearing price. While some of the price gap may reflect quality differentials, it would appear unlikely that this would explain the degree of underpricing observed. Figure 3.1 illustrates the impact of pricing below the market-clearing level on BW's revenue.

Figure 3.1: Characterisation of BW's mooring pricing policy



Source: OXERA.

The price comparisons suggest that BW is charging a price (P_1) that is lower than the price charged by private mooring providers (P_0). As the diagram shows, charging this lower price is likely to lead to excess demand for BW moorings (hence, the long waiting lists for BW moorings), but little or no excess demand for private moorings (hence, the higher level of availability of mooring spaces at private sites than at BW sites). This situation will also

result in BW foregoing revenue (the shaded area) that it could have otherwise have charged to its mooring customers.

- *BW's response to low levels of demand*—the case studies also highlight that BW takes a long-term and holistic view of the canal network when considering how to price moorings in low-demand locations. In both Scotland and the North West, the availability of good quality moorings at low prices is seen as essential for building up demand for boating in less popular locations.

4. Competition Audit

The size and extent of BW's activities in the moorings market directly, and as the provider of the majority of the Britain's waterways, raises the possibility that BW could contravene competition-policy rules.

The Competition Act 1998 and the Enterprise Act 2002 govern the behaviour of firms when setting prices for goods and services in the UK. They prohibit various forms of anti-competitive behaviour, and abuse of a dominant market position. The purpose of this competition audit is to highlight processes or practices of BW that may contravene these acts. This audit is not intended to be conclusive, but merely to serve as a guide.

To assess the degree of competition in a market, authorities focus on three areas.

- *Market definition*—in determining whether a company's actions (eg, pricing) could be regarded as anti-competitive, it is necessary first to define the relevant markets. Defining the relevant markets is not an end in itself, but rather an important step in evaluating the competitive constraints faced by a firm.

- *Assessment of dominance within those markets*—once the markets have been defined, it is possible to assess a firm's dominance within them. A firm is considered dominant, if it can behave independently of its competitors and its consumers.

- *Abuse of dominance*—it is not an offence for a firm to have a dominant position in a market; however, abuse of that dominant position is an offence. Abuses of a dominant position include excessive, discriminatory, and/or predatory pricing.

The section is divided as follows:

- section 4.1 introduces the broad economic principles of market definition and defines the plausible relevant markets for the mooring business;
- section 4.2 outlines the theoretical principles of dominance, and gives some guidance on whether BW would be likely to be considered a dominant firm in the relevant markets;
- section 4.3 outlines the forms of anti-competitive behaviour that firms should seek to avoid.

4.1 Relevant mooring markets in which BW operates

4.1.1 Principles of market definition

The market contribution of a company will change depending on how broadly the market is defined. Usually, the higher its market share, the more likely it is that the company is found to be dominant. This explains why market definition is often the decisive—and therefore the most disputed—issue in competition inquiries.

The relevant market for competition analysis usually has a product and a geographical dimension. In order to define the relevant market, competition authorities in the USA and Europe use the 'hypothetical monopolist test'—also known as the 'small, but significant non-transitory increase in price' (SSNIP) test. The SSNIP test follows an iterative process in which all substitute products or regions that provide a significant competitive constraint on the product or region of interest are identified.

The logic of the SSNIP test is that, if a hypothetical profit-maximising monopolist for a product or geographical area (eg, moorings in certain region) could not raise price above 5–10%, this can only be because a significant number of customers would switch to the next closest substitute product or geographical area—ie, mooring in a neighbouring region.

Companies face three types of constraints that may prevent them from raising the price of that product.

- *Demand-side substitution*—as a result of a price increase, customers may switch to alternative products or to the same product supplied from alternative geographical areas. For example, if the price of BW's moorings increases, boaters may switch to an alternative, non-BW, moorings provider.

- *Supply-side substitution*—existing companies already supplying similar products (or the same product to neighbouring geographical areas) may readily switch to supplying the product (or geographical area) of the company in question, when prices increase. For example, if the price of BW's moorings in certain region increases, firms operating in neighbouring regions may start to offer the mooring service in that region.

- *New entry*—new competitors may set up facilities, and start to supply the service or area in question.

Applying a complete hypothetical monopolist test in practice is difficult. Ideally, it would require modelling some general demand system, and then econometrically estimating all the own- and cross-price elasticities of demand on the basis of empirical price and sales data. Therefore, competition authorities often resort to other quantitative tests, such as price correlations over time, or to qualitative tests, such as marketing studies. For example, a marketing study may ask customers directly whether they would switch to other products in case of a price increase (this test is less rigorous than a quantitative assessment).

4.1.2 The product dimension of moorings markets

BW and third-party moorings providers generally distinguish four types of moorings, delineated by their location on or relative to the waterway:

- online offside;
- online towpath;
- basin/lay-by;
- offline—may be built (eg, marina), a natural lake, or backwater.

To define the relevant product market, it is necessary to determine whether consumers will switch from a certain type of mooring as a result of a small but permanent price increase. In other words, the central issue is whether, for a boater, two products (eg, a marina and a towpath mooring) can be regarded as close substitutes, and are therefore in the same relevant market.

The first step is to identify whether there are some customers who cannot switch when there is a price increase. To do this, it is necessary to have a detailed description of the profile of moorings users and their response to a change in mooring fees. The following is a characterisation that is intended to be an initial analysis of captive customers.

Online moorings parking is linear alongside a stretch of canal, as opposed to marinas and lay-by/basins where is possible to park several vessels in close proximity. Customer access to towpath mooring is easier than to online offside moorings but the latter are safer since fewer people pass by.

Marinas usually offer a wider variety of services, which range from water, electricity to the berths, and sewage connection, to boat supplies (eg, diesel and gas), maintenance and repair facilities, and canal-side shops. They can provide more security than online moorings, and there is less chance of disturbance by passing boats.

There are two types of commercial boaters who could be relatively insensitive to an increase in marina fees—ie, captive to marinas: first, boats that transport passengers for short trips alongside the canal, which might have difficulties in parking in online moorings due to the lack of space for boat turnaround. Second, companies that rent crafts usually operate fleets of 10–20 vessels that tend to be double- or triple-moored.

A special type of mooring user is the residential customer: they park in residential moorings where they can stay permanently or for very extended periods, and have access to a range of utilities (eg, electricity, potable water, sewage), car parking, and sometimes adjacent land for storage. BW does not allow residential mooring at non-residential sites.

In addition to commercial boaters and residential customers, there is another important type of boater: the leisure customer who owns their craft, and who is usually parked on a permanent mooring. Leisure customers represent 85% of total boaters. Evidence from BW's 'Boat Owners' Survey, 2003' indicates that the mooring decision of leisure customers is a trade-off between security, quality, and price. However, the mixture of customers is heterogeneous with a variety of socio-economic backgrounds and ages and, ultimately, preferences. The high degree of differentiation makes it difficult to determine how leisure boaters may react to a price change in any type of mooring.

Therefore, there are at least three possible scenarios for the product-market definition:

- *four separate markets, one for each type of mooring*—residential moorings could be a fifth market, given the special kind of facilities offered in this type of mooring;

- *two product markets, one for online moorings and lay-by/basins, and another for marinas*—in the marina market, operators compete for commercial users and leisure customers highly concerned about security, and boat and customer services. In the online moorings market, providers compete for customers with a lower preference for security and a higher preference for low mooring fees;

- *one mooring market where customers switch to any type of moorings when there is a small but significant, permanent price increase*.

Broader market definitions might be in the interest of BW: for example, the company is the majority provider of towpath and online offside moorings and lay-by/basin, while it competes with other operators in the marinas market. Including the first three types of moorings in the same market as marinas would make BW less likely to be found dominant.

It would also be in the interest of BW to argue that other moorings, such as sea-based moorings, are close substitutes of canal moorings. Substitution possibilities would be limited to the areas near the sea, and to certain type of vessels (eg, steel vessels).

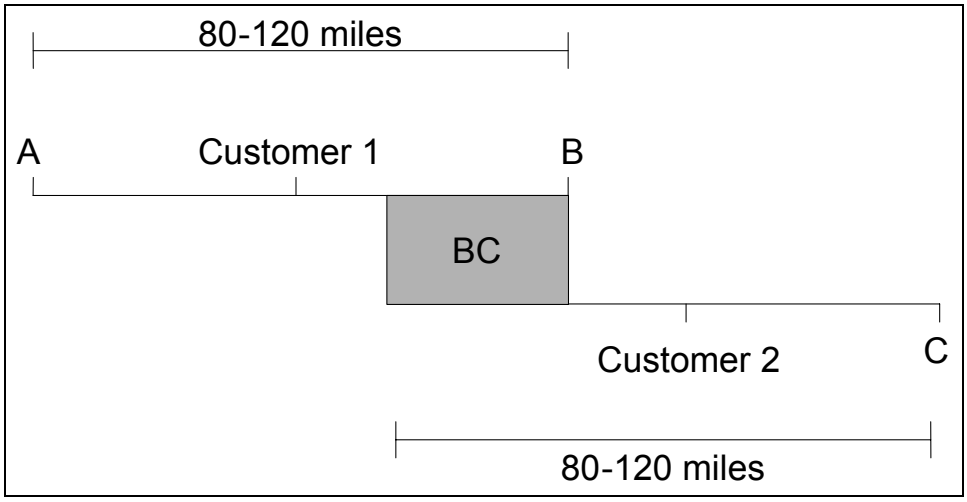
4.1.3 The geographical dimension of mooring markets

BW's 'Annual Review of Long Term Moorings Prices: Managers' Briefing for April 2004 Revisions' suggests that moorings users are willing to travel up to around 40 or even 60 miles to a mooring from their home location. The interviews conducted by OXERA broadly confirmed this result, as well as BW's 'Boat Owners' Survey 2003'. In this survey, out of a group of eleven factors, 'convenience to home' was the least important basis for choosing a mooring.

Therefore, if there is an small but significant rise in the fee charged for a mooring, a boater would be willing to switch to another mooring 40–60 miles from their home location. From a market-definition perspective, this implies that a mooring price is constrained by the price charged for moorings located 80–120 miles from the mooring.

The geographical market could be wider due to the presence of 'continuous chains of substitution' for moorings. In this case, moorings that do not directly compete against each other should be considered to be in the same relevant market. For example, lets suppose that there are three moorings, A, B and C (Figure 4.1). Mooring A competes with mooring B, and mooring B competes with C because they are relatively close. Therefore, moorings A and C are in the same relevant market because the prices charged for A constrain the prices charged for B, which constrain the fees charged for mooring C. Competition in the line AB and the area BC will be sufficient to ensure that the prices charged for A are constrained by those charged for C, and vice versa.

Figure 4.1: Continuous chain of substitution of moorings



Chains of substitution are limited. If they were not, mooring prices would be uniform across regions, which is not the case as OXERA's survey results show. In the presence of chains of substitution, it is highly unlikely that the relevant geographical market is narrower than 100 miles in radius.

4.1.4 Assessment of dominance

A firm is considered to be dominant when it is able to act independently of the market forces; that is, it has freedom to determine its prices or output levels without concern for the actions of its customers or rivals.

To assess dominance, the UK competition authorities would consider the following factors.

- *Market shares*—competitors already in the market may constrain the pricing decisions of the firm under investigation. In the UK Competition Act 1998, firms are presumed to be dominant if their share of the relevant market is greater than 40%.

- *Barriers to entry, expansion or exit*—potential competitors and firms that have already entered the market might also constrain the firm under investigation, if they can enter in a sufficient scale. Competitors might be deterred from entering or continuing to operate in the market as a result of barriers to entry or expansion, such as control over essential facilities by the incumbent, absolute cost advantages of the incumbent, and economies of scale and scope in the provision of the product.

- *Consumer switching*—customers' willingness to switch to new suppliers as a result of a SSNIP is a sign of the degree of competition in a market. If consumers' responsiveness is high, no provider in the market will be able to raise prices profitably without the risk of losing market share.

These three aspects will be considered below.

4.1.5 Market shares

A proxy for the level of competition in a particular market is to measure the number of competitors, the firms' shares, and hence the concentration of the market.

Market shares can give an indication of the extent of a firm's market power. A firm with a larger share than others may, to some extent, be able to raise its price independently of rivals.

However, even when market shares are large, it is important to look at their changes over time to obtain a more accurate picture of the dynamics of the market, and the extent of competition therein. A firm with a large market share is likely to have significant market power, if its share has remained stable over time, although this may not always be the case.[8] Conversely, the fact that a firm with large market share is gradually losing this market share may indicate that the market is becoming more competitive.

Due to the lack of information, the following preliminary dominance evaluation is based on BW's market shares at one point in time. As was established in section 4.1.3, the indicative geographical market for the moorings market is likely to be a radius of above 100 miles for each mooring site. However, due to data and time limitations, broader geographical areas are examined.

Table 4.1 shows the estimated market share of BW on each of its canal groupings for 2003.

[8] The UK Competition Commission's guidelines suggest that high and stable market shares may indicate that a firm has competed successfully on a continuing basis.

Table 4.1: Market shares of BW

Waterway	Total berths	BW market share (%)	Greater than 40%?
Aire & Calder	870	38	
Birmingham & BC	485	21	
Border Counties	669	17	
Caledonian	120	100	Yes
Coventry, Ashby, T&M	1,390	23	
Crinan	90	100	Yes
East Midlands	1,022	41	Yes
Forth & Clyde	135	100	Yes
Glos & Severn	1,197	15	
GU North	1,205	64	Yes
GU South	2,230	22	
Isle of Dogs	195	54	Yes
K&A	1,504	14	
Lancaster	996	36	
Leeds & Liverpool	1,619	26	
London	2,084	33	
North Yorkshire	1,562	28	
Oxford & Grand Union	1,989	20	
Peak & Potteries	1,435	14	
S. Pennine Ring	181	56	Yes
S Wales & Somerset	538	91	Yes
South Yorkshire	326	27	
Staffs & Shropshire	1,398	23	
Stratford/Grand Union /W&B	1,261	19	

Source: Gareth Maeer, BW, Supply-Capacity-Projected spreadsheet, August 2003; OXERA calculations.

In 8 of the 24 BW's canal groupings, the company's market share is greater than 40%. Based on this broad geographical definition of the market, BW could potentially be found dominant in those regions. The berths in these canals represent 14.2% of the total number of berths (24,501).

For narrower geographical areas, BW could be found to be dominant in more regions. In particular, a further three canal groupings exhibit market shares greater than 30%.

From a product-side perspective, if a narrow market definition is adopted, BW may be found dominant in the towpath, online offside, and basin/lay-by markets, since it is the majority supplier in each. The company may face a higher degree of competition in the market for offline/marina moorings due to the separation of its marina business. This depends on the degree of independence of BWML from BW.

It is not possible to draw any definitive conclusions without delimitating the product and geographical markets, and having the relevant data.

4.2 Barriers to entry, expansion and exit

To assess a firm's dominance, in addition to evaluating the market shares, it is necessary to consider barriers to entry, expansion and exit. These barriers make additional entry of new or the expansion of existing entrants after they have established themselves difficult.

In assessing the potential for entry, expansion and exit as competitive constraints, the following factors are considered to be important:

- history of past entry and evidence of expansion plans and/or planned entry by third parties;
- evidence of the success of new entrants in terms of market shares;
- direct observation or statistical information of barriers to entry, expansion and exit;
- the costs involved in entry or expansion, and in operating at the minimum efficient scale necessary to achieve a reasonable competitive level of costs;
- the likelihood of entry within a sufficiently short timescale that the entry influences the incentives and decisions of the existing firms in the market;
- the costs of exiting the market;
- the potential effect of technological change and innovation on barriers to entry or expansion;
- the likely response to entry or expansion by the incumbents.

Possible barriers include:

- absolute cost advantages of the incumbent;
- strategic behaviour of the incumbent;
- information constraints—eg, rivals and potential entrants do not have information of mooring sites with long waiting lists or an increasing demand;
- control over an essential facility—eg, access to the waterway;
- the incumbent's brand reputation—customers may not want to switch to a mooring because of the lack of reputation of the new service provider;
- economies of scale and scope in the provision of moorings;
- regulatory restrictions

4.2.1 Consumer switching

An analysis of entry incentives should be accompanied by evidence of price responsiveness. A consumer survey would be the appropriate vehicle to collect information about consumers' propensity to switch.

Evidence of consumers' willingness to switch provides an understanding of how customers react when a certain product or service provider increases prices permanently by a small percentage. Therefore, the ability to switch is an indication of the elasticity of demand specific to a firm.

Consumer responsiveness also reflects the degree of competition in a market. For example, if customers do not switch to a different mooring provider when their current supplier increases prices, the firm's prices are not constrained by those of its rivals. As a result, the firm is dominant and competition in the market low.

4.2.2 Abuse of dominance

As was noted in section 4.1, it is not an offence for a firm to have a dominant position in a market; however, abuse of that dominant position is an offence. Consequently, BW needs to be aware of the forms that abusive behaviour can take so that it can avoid engaging in such behaviour.

Abuses can take several forms, including:

- *excessive pricing*—prices are not reflective of costs and do not reflect returns from innovation;
- *predatory pricing*—prices are set at a level below cost (most likely incremental cost) in the short term to eliminate competitors or discourage firms from entering;
- *price discrimination*—this constitutes an abuse when it is used to reduce competition significantly. The firm must be dominant in a closely related market (eg, online moorings), and the price differences between services (eg, marinas versus online moorings) must not reflect differences in the relative cost, quality or any other service attributes.
- *margin squeeze*—a vertically integrated firm charges high prices for an essential facility (eg, canal network) and low prices for the final product or service (eg, moorings), squeezing the profit margin of efficient downstream rivals. As a result, entry by new operators is discouraged as well as expansion from existing providers.

Specific competition issues directly related to BW activities require a much more detailed analysis: this constitutes a preliminary list of possible abuses that a dominant firm can engage in.

4.3 Discussion and conclusions

This section provides a discussion of the competition policy concerns raised by BW's current policy and practice. It also outlines some suggested alternative practices that are likely to remedy these concerns.

4.3.1 Downstream market

The analysis in this section suggests that there are at least three plausible product markets; a single moorings market, one with two products (online moorings/basins and marinas), and another with four products (one for each type of mooring). The analysis also indicated that the geographical market is likely to be a radius of at least approximately 80 miles around each mooring, and potentially much larger if chains of substitution exist between moorings.

Market share data was only available for each BW waterway, several of which are larger than the 80-mile radius. The data was also only available for shares of the single moorings product market, the broadest of the three proposed definitions. Even at these broad market definitions, BW's market share exceeded the OFT's threshold for the presumption of dominance (40%) in eight of its waterways. For narrower product and geographical markets, BW may be dominant in even more locations.

Since it seems likely that BW would be found dominant in some products/locations on its network, the company needs to exercise care with regard to the pricing and supply of moorings. In terms of pricing, BW's current policy of seeking to set BW's mooring prices equal to the market-clearing price suggests that allegations of predatory pricing are unlikely to be plausible. However, as was noted in the case studies, there is evidence that BW's moorings are systematically cheaper on

average than private-sector moorings of similar types. This may be due to quality differences; however, it may also be due to systematic under-pricing; in which case, a predatory pricing allegation may be more plausible.

BW needs to be careful not to engage in excessive pricing in locations where the company is likely to be dominant; pricing at the market-clearing level combined with constrained supply is likely to lead to excessive pricing. Consequently, if BW intends to continue with a pricing policy based on scarcity pricing (as is suggested in section 5), BW also needs to be careful not to attempt to constrain supply of moorings by either BW or third parties. The review of current practices does not highlight evidence of such practices, since the focus of managers in all regions seems to centre on increasing supply (of both BW and non-BW moorings) rather than price when demand exceeds supply. Therefore, scarcity pricing should not pose problems for BW provided that BW does not restrict output, and is not distorting the downstream market via its upstream practices.

4.3.2 Upstream market

The upstream market primarily consists of the provision of access to the canal network. Where possible, BW charges offline mooring providers for access to its network via the canal-connection fee. BW also effectively charges fees to providers of online moorings. Since BW is the only provider of access to the canal network, it is by definition in a dominant position, and therefore must exercise caution in its access policy and prices.

Price discrimination

OXERA's review of service managers highlighted that while the BMF agreement—which specifies a canal-connection fee equal to 9% of mooring revenues per annum for offline moorings—is used as a benchmark, the final agreement is often negotiated on a case-by-case basis between the offline mooring provider and BW. Competition authorities may be concerned about this type of negotiation, since it is likely to result in price discrimination. As was noted above, this constitutes an abuse when it is used to reduce competition significantly. In this case, it is possible that BW offers substantially different canal-connection fees to competing offline mooring providers. If these different fees do not reflect different costs incurred by BW, they are likely to act to distort the competition between the two offline mooring providers, therefore constituting an abuse. It is the distortion of the downstream market that is the concern here, rather than the price discrimination per se.[9]

These competition concerns are likely to be alleviated, if BW either removes these differentials, or justifies them in relation to the costs imposed on BW's business. A possible way to achieve this would be to operate a tariff scheme, whereby negotiation over fee levels is largely removed and BW's connection charges are set *ex ante* and published. Under such a scheme, BW could still offer discounts to some operators provided they have time-limits, there is a reasonable prospect of the third-party business being profitable without the existence of the discount in the future, and they are non-discriminatory and publicised.

Margin squeeze

Since BW operates in both the upstream and downstream moorings markets, it could be accused of engaging in a margin squeeze. For example, BW could levy very large canal-connection fees that

[9] Scarcity pricing of moorings in the downstream market will also result in price discrimination, but this is less concerning because it should not distort competition.

make it impossible for an efficient company to make the required return operating in the downstream market, driving out competitors to BW from the downstream market. In this scenario, BW would be able to sustain the losses/low returns being made by its downstream operations by cross-subsidising this from the excessive profits it would be making in the upstream market. By engaging in a margin squeeze, BW would be leveraging the market power it holds in the upstream market into the downstream market in order to create or strengthen a dominant position there.

It is not possible to tell from OXERA's current analysis whether BW's canal-connection fees constitute a margin squeeze; this would require financial modelling of the cost structure of downstream mooring providers' businesses. However, a reasonable proxy for this may be provided by BWML, BWs downstream marina operator. Assuming BWML pays the same rate of canal-connection fee as competing marina operators, provided that BWML can make a reasonable return, it is unlikely that BW is engaging in a margin squeeze. However, as was noted above, if the price discrimination in canal-connection fees results in BWML paying a lower canal-connection fee than other competitors, this will not be a good test.

5. Theoretical Alternative Pricing Strategies

BW's current policy towards the pricing of long-term moorings is set out in the 'Annual Review of Long Term Moorings Prices: Managers' Briefing for April 2004 Revisions'. This states that prices should reflect demand, but also have due regard to BW's wider responsibilities to encourage greater numbers to enjoy boating and related activities. Together with the evidence from the survey of BW service managers, this suggests that BW's current pricing strategy can be best categorised as a form of demand-based scarcity pricing (see section 5.2.1 below), with prices being constrained to take into account BW's wider responsibilities.

A range of alternative pricing strategies is available to BW, each with its own advantages and disadvantages. The section considers a range of viable options and outlines their impact on:

- BW revenue;
- BW's customers;
- the practical viability of adopting these strategies—this includes assessing the information requirements, the calculations involved, and the ease with which BW managers could implement them.

There are two broad approaches to pricing; cost-based, and demand-based. Both are examined below.

5.1 Cost-based pricing measures

Cost-based pricing measures relate the price that a consumer pays for a service to the cost incurred by the business in providing that service. Cost-based pricing helps to ensure that BW is appropriately remunerated for the costs incurred in providing a service, and offers appropriate signals to consumers regarding the resources that are involved in providing services. There are four commonly used cost-based price measures; each takes a different view about which costs the price should be based on.

5.1.1 Average variable costs

BW has both fixed and variable costs. As a result, pricing at a level equal to average variable costs (AVC) will recover the variable costs incurred by BW in providing moorings, but will not recover any portion of the fixed costs.

The majority of costs in moorings provision are fixed costs; once a mooring has been built, its operating costs are generally quite low. The proportion of fixed and variable costs will vary by type of mooring—online moorings are likely to have few variable costs (eg, maintenance and provision of a warden), while marinas are likely to have more variable costs (eg, security staff to monitor CCTV). This means that AVC pricing is likely result in low prices.

- *BW revenue*—AVC pricing will not recover the fixed costs of moorings, and will therefore require a subsidy from government or from other areas of BW's business to implement.

- *BW customers*—AVC pricing is lower than many other price measures. Given the small proportion of variable costs involved in moorings, it is likely to be particularly low in this case. Therefore, customers are likely to be in favour of this form of pricing.

- *Practicality*—BW needs only to know the variable costs of operating each of its mooring locations to price at this level; therefore, it would be relatively easy to implement.

5.1.2 Average total costs

Charging average total costs (ATC) would recover both the fixed and variable elements of the cost of providing a service. It involves allocating the historical costs incurred by BW into different categories, corresponding to each of the company's outputs. Pricing at this level would ensure that all the costs incurred by BW in the provision of mooring space are recovered.

ATC pricing would result in higher prices than AVC. ATC pricing also raises the issue of which fixed costs should be included in moorings fees: should a proportion of the joint costs associated with the provision of the canal be considered? Or should the total costs of the mooring simply consist of the costs directly attributable to the mooring site? Section 5.1.5 deals with this issue of joint-cost allocation in more detail.

- *BW revenue*—ATC pricing should recover all the costs associated with providing moorings, thereby not requiring a subsidy from government or from other BW activities.

- *BW customers*—ATC pricing would be substantially higher than AVC pricing, and as such is likely to be less favourable to customers.

- *Practicality*—BW needs to know both the fixed and variable costs operating each of its mooring locations to price at this level. If the fixed costs include only those directly associated with a mooring, this should not be very complicated. If it includes an allocated proportion of the costs of providing the canal, it will be significantly more complicated.

5.1.3 Short-run marginal cost

In the short run, some costs are fixed; as such, short-run marginal costs (SRMC) represent the *additional* variable costs that will be incurred by BW in providing a service to an additional customer. This marginal element differentiates SRMC from AVC. Pricing at a level equal to SRMC would recover the additional variable costs incurred by BW of providing new moorings, but it would not recover any portion of the fixed costs. Pricing at SRMC may also not cover all of the variable costs. 'Short run' is often defined as any period of less than one year.

Pricing at the SRMC level ensures the most efficient allocation of a given amount of mooring space, but does not cover the long-run cost of providing this space.

- *BW revenue*—SRMC pricing would not recover the fixed costs of moorings, and would therefore require a subsidy from government or from other areas of BWs business to implement.

- *BW customers*—SRMC pricing is often the lowest price, as well as the most efficient form of pricing resulting in the maximum use of a fixed asset by customers. Therefore, customers are likely to be in favour of this form of pricing.

- *Practicality*—BW need only to know the variable costs of operating each of its mooring locations to estimate the level of SRMC; as such, it would be relatively easy to implement.

5.1.4 Long-run marginal cost

In the long run, all factors of production are variable, and therefore, all costs are variable. Consequently, long-run marginal costs (LRMC) represent all the costs (ie, both fixed and variable),

associated with providing *additional* output to customers. However, pricing all units of output at LRMC may not recover the full fixed costs of the company. This reflects the fact that LRMC is a forward-looking concept.

Pricing at this level provides the most appropriate long-run price signals to both consumers and competitors.

- *BW revenue*—LRMC pricing would be likely to recover a greater proportion of costs than SRMC, but would not necessarily result in the recovery of all of the fixed costs of moorings.

- *BW customers*— customers may end up paying more or less than other methods, such as ATC, depending on the degree of excess capacity in the region, and the costs associated with adding any required new capacity.

- *Practicality*—calculating LRMC is complicated and time-consuming. It would require BW to specify and cost a forward-looking investment programme to meet estimated moorings demand, then divide the discounted cost of this programme over the expected number of new moorers to give LRMC.

5.1.5 Regional averaging

In some infrastructure industries where the costs of serving different groups depend on characteristics such as their geographical location, it may be appropriate to average out costs in order to provide similar services to groups at a similar price. This approach is consistent with the approach to pricing of postal services, where a stamp costs the same regardless of the location within the country where an item is being sent. In effect, under this approach, the low-cost customer groups (such as those in urban areas) cross-subsidise the high-cost consumer groups. A similar degree of geographical averaging has been in place in the gas sector, with equivalent charges for gas distribution regardless of the geographical location within the country. However, Ofgem has recently changed this approach, in order to move towards a more cost-reflective pricing structure in the future. A transitional period is however to be introduced to minimise the disruption for consumers.

- *BW revenue*—while in principle this approach would recover the same amount of revenue in aggregate, there may be a risk to BW that charges may in some cases be higher than local market conditions might bear. This approach is generally not considered valid in competitive industries unless a sector-wide policy for recovering the cross-subsidies is implemented.

- *BW customers*—a sudden change to this approach may create winners and losers, and would likely lead to charges that are less cost-reflective than current charges.

- *Practicality*—in principle, it would not be difficult to estimate average costs across all of BW's regions (although an appropriate allocation of joint and common costs to the moorings business would be required, as discussed below). Nevertheless, this policy would suffer from the disadvantage that it would not be consistent with cost-reflectivity, nor with local market conditions.

5.1.6 The single till approach

A further approach to charging for mooring may be to consider the net costs associated with the provision of the site, after allowing for any further revenues generated (such as from retail activities at the marina). The essence of this approach is that, in a competitive market, an entrant would be willing to invest in new moorings capacity if the expected total returns from the project, both

directly from moorings charges and indirectly from other sources, meet the cost of capital of the project. Lower moorings prices would therefore be charged at locations where retail activities bring a substantial amount of revenue to the business.

- *BW revenue*—this approach would potentially lead to reduced charges from the moorings business, if retailing and other related revenues are substantial and not already taken into account.

- *BW customers*—while customers who use popular facilities with lots of amenities may end up paying less, other customers (certainly all those using online moorings) would be unlikely to see any change in prices.

- *Practicality*—this method would be relatively complicated to apply at each individual location, since information on the range of related activities undertaken by BW would be required. It may also lead to substantial distortions in pricing, with very low prices in effect at locations where capacity is under the most pressure (as is the case at BAA's London Heathrow Airport where a single till policy is in effect).

5.1.7 Allocating joint and common costs

In infrastructure-intensive industries, such as BW's, cost-based pricing methods that include an element of fixed costs (eg, LRMC and ATC) often require joint or common costs to be allocated across different activities. A joint or common cost is one that is incurred in providing several outputs of the firm. BW's key joint costs are those associated with the provision of the canal network. The existence of the canal allows the provision of boating, online mooring, and marina mooring services. This common cost can be allocated across all of the three classes of use.

There are four key cost-allocation methods available to make this allocation.

- *cost causality*—determining the direct cause of a particular cost and allocating accordingly. This centres on the principle that costs are allocated to the most directly attributable cause. Charges to customers are then based around the principle that the activity that caused the cost should bear the cost. Since moorings do not cause the canal to exist, if this allocation method were used none of the joint cost of the canal would be applied to the moorings business unit;

- *Ramsey-style basis*—allocating costs on a willingness-to-pay basis, similar to Ramsey-pricing in utilities. The most economically efficient allocation of joint costs is achieved by examining the demand for the two products being jointly produced.[10] Overall economic welfare can be enhanced if the joint costs are borne by the various consumers in proportion to their ability and willingness to pay. Using a Ramsey-style allocation of joint costs should result in the maximum amount of output, since the consumers that are the least responsive to price bear the largest proportion of the joint costs. A disadvantage of the Ramsey-style approach to joint-cost recovery is that it was rejected by the Competition Commission in its

[10] Ramsey methods are second-best to marginal-cost approaches; however, marginal-cost methods do not necessarily cover all costs.

inquiry into mobile phone charges earlier this year.[11] This makes Ramsey-style pricing less attractive from a competition perspective;

- *revenue measure*—in proportion to the revenue (a measure of willingness to pay) derived from each output. The revenue generated from the sale of a particular product or service indicates how much it is valued by consumers relative to other outputs. It is arguable that, on grounds of equity, each consumer group should bear joint costs equally. This means that the revenue derived from the sale of the various outputs produced by BW's network can be used to divide up proportionately the joint costs associated with providing and maintaining it, according to the relative values of the outputs provided to different consumer groups. A potential problem concerns the circularity between allocating the joint costs to some outputs, which affects the price, and consequently the revenue generated, and the sale of those outputs. Competition authorities are concerned that this circularity means that excessive pricing may be overlooked if this method is used;

- *physical output measure*—in relation to volumetric measures of output. This necessitates the assumption that each consumer should bear the joint costs of the network in proportion to the physical output that they consume. An advantage of this method is that it does not suffer from the circularity problems inherent in the revenue method, since the physical amount of output can be measured independently from the price paid for it. This method is also relatively easy to calculate

5.2 Demand-based pricing measures

Demand-based pricing measures either partially or fully break the link between the costs of providing a service and the price that is charged for it. Instead, prices are based on the willingness to pay of the customer. An advantage of this is that it may result in higher revenues. However, a disadvantage is that non-cost-reflective prices are more likely to raise competition-policy concerns. Therefore, demand based pricing needs to be used with caution.

5.2.1 Scarcity pricing

Scarcity pricing, or demand-clearance pricing, involves setting prices so that the market clears (ie, all units of output are sold). It is based on the concept that the good being sold is scarce and that the most efficient rationing mechanism is price, and not queuing (eg, waiting lists).

- *BW revenue*—scarcity pricing would maximise the revenue that BW can make from its moorings business.

- *BW customers*—scarcity pricing would result in higher prices than today because there seems to be excess demand at current prices; therefore, customers are unlikely to be in favour of its use.

[11] Competition Commission (2003), 'Vodafone, O2, Orange and T-Mobile: Reports on References under Section 13 of the Telecommunications Act 1984 on the Charges Made by Vodafone, O2, Orange and T-Mobile for Terminating Calls from Fixed and Mobile Networks'.

- *Practicality*—scarcity pricing involves raising prices until demand equals supply; as such, it is judgement-based, and does not necessarily require substantial amounts of information.

5.2.2 Ramsey pricing

Ramsey pricing is a form of price discrimination designed to maximise revenue while resulting in the minimum reduction in quantity demanded. It involves setting prices in inverse proportion to the price elasticity of demand of different consumer groups. For example, under Ramsey pricing, customers with inelastic demand would be charged more than those with elastic demand.

- *BW revenue*—Ramsey pricing is usually used to extract a fixed amount of revenues from customers.

- *BW customers*—Ramsey pricing would result in some customers effectively cross-subsidising others. It is likely that there would be some concern about the extent to which this takes place.

- *Practicality*—pure Ramsey pricing requires the elasticities for different groups of consumers to be known; however, these can be proxied.

5.2.3 Pricing with respect to the available alternatives

A further form of demand-based pricing is to base the price for each consumer on the availability of alternative supplies. Customers with good access to alternatives are charged a low price, while those with poor access are charged a high price. While theoretically different from scarcity pricing, it is likely to lead to similar price levels.

- *BW revenue*—this pricing mechanism would maximise, or close to maximise, the revenue BW can make from its moorings business.

- *BW customers*—this pricing mechanism would result in higher prices than today; consequently, customers are unlikely to be in favour of its use.

- *Practicality*—this pricing mechanism involves raising prices until demand equals supply; as such, it is judgement-based, and does not necessarily require substantial amounts of information.

5.3 Discussion and conclusion

Table 5.1 provides a summary of the features of each of the pricing mechanisms discussed in this section.

Table 5.1: Summary of pricing methods

Pricing method	BW revenue	Customers	Practicality
BW's current pricing mechanism	Does not maximise BW's revenue		n/a - already implemented
Cost-based pricing			
AVC	Would not recover all costs associated with moorings—requires subsidy	Lower than current prices; therefore, customers are likely to favour	Easy to estimate
ATC	Ensures full cost recovery for moorings business	Substantially higher than AVC, less favourable with consumers	More complicated than AVC and SRMC, but easier than LRMC—requires historical accounting data and joint-cost allocation
SRMC	Would not recover all costs associated with moorings—requires subsidy	Lower than current prices; therefore, customers are likely to favour	Easy to estimate
LRMC	May not recover all costs associated with moorings—may require subsidy	Substantially higher than SRMC, less favourable with consumers	Difficult to estimate – requires forward investment programme to be specified
Regional averaging	Should be neutral	Winners and losers according to geographical location	Inconsistent with either cost-reflectivity or market conditions
Single till	May lead to reduced revenues	Customers in popular facilities would gain most	Would require information on revenues from a range of activities at each site
Demand-based pricing			
Scarcity pricing	Maximises revenue	Highest prices; unfavourable with consumers	Easy to estimate—can use judgement or trial and error
Ramsey pricing	Extracts a fixed amount of revenue from customers	Explicit cross-subsidy between customer groups; unfavourable with consumers	Difficult to estimate—requires elasticity estimates for different customer segments
With respect to alternatives	Close to maximise revenues	High prices; unfavourable with consumers	Easy to estimate—requires information on competitors pricing, and the likelihood of new entry

Source: OXERA analysis.

This section has discussed a range of cost-based pricing methods, all of which are theoretically possible to implement in BW's situation. Several suffer from the problem that they will not necessarily recover the costs of providing the moorings services (AVC, SRMC, LRMC), leaving ATC as the most promising alternative. However, this method must deal with the complicated issue of the allocation of the joint cost of the canal asset. This leads to the conclusion that cost-based approaches are both complicated to calculate, and, to a large extent, arbitrary, since they are so dependent on the level of the joint costs allocated to moorings.

The alternative to cost-based pricing methods is demand-based pricing methods. Ramsey pricing suffers from the problem that it can be difficult to estimate the proportion of charges that should be recovered from particular consumer groups; in addition, the fixed revenue to be extracted needs to be calculated; this is usually done with respect to costs, again making this a less than ideal method.

Pricing with respect to alternatives raises competition policy concerns since it is possible that it could result in BW charging very high prices (perhaps excessive prices) in locations where alternatives are scarce (eg, perhaps Scottish lowlands) and very low prices (perhaps predatory prices) in locations where alternatives are abundant (eg, perhaps Kennet and Avon).

This leaves scarcity pricing as the remaining viable alternative for BW to adopt. While this is similar to pricing relative to alternatives, the key difference is that pricing with respect to the availability of alternatives refers to third-party alternatives, while scarcity pricing refers to availability of all moorings, ie, the supply and demand balance. This is similar to the pricing approach used at present, whereby BW seeks to mark its mooring prices to the market-clearing price. The evidence shown in the case studies suggests that BW has been setting its prices somewhat below the market-clearing price; thus, adopting this form of pricing is likely to imply that prices will rise in the short run. In locations where there is substantial competition from private mooring firms, BW is likely to be able to use this form of pricing without raising competition concerns. However, it will need to be particularly vigilant in locations where it is likely that the firm would be deemed dominant in a competition investigation, since it could be accused of charging excessive prices. Consequently, if BW uses scarcity pricing it needs to be careful not to constrain the supply of BW or third-party moorings. Continuing the current policy of encouraging all types of moorings, both BW and non-BW in all locations, wherever possible, is likely to be sufficient to alleviate this concern.

6. Discussion and Conclusions

This section sets out the key conclusions of the analysis presented in this paper. There are two sets of conclusions: the first concerns the competition audit, and the second addresses BW's mooring pricing policy.

6.1 Competition audit

The competition audit highlighted that BW's moorings operations are likely to be found dominant in some geographical locations for plausible geographical and product market definitions. This suggests that, in the downstream market for the supply of moorings to the public, BW needs to exercise caution in its pricing policy in those locations (see below). BW also needs to ensure that it does not attempt to constrain the supply of moorings by either BW or third parties. The review of current practices suggests that BW's current practices do not result in either of these practices, since the focus of managers in all regions seems to centre on increasing supply (of both BW and non-BW moorings) rather than price when demand exceeds supply.

The review highlighted greater concerns about BW's practices in the upstream market for the supply of services that enable moorings to be operated. There seemed to be inconsistent practice between BW locations regarding the canal-connection fee for third-party offline mooring sites (eg, third-party basins or marinas). The BMF agreement, which sets the canal-connection fee at 9% of the moorings revenue collected by the mooring site, is not always adhered to, with negotiations occurring on an individual basis resulting in different connection fees for different moorings providers. As such, BW seems to be discriminating between different offline moorings providers, which may have an impact on downstream competition. The concern here relates to the distortions to competition in the downstream market that are created by price discrimination in the upstream market, rather than concern about the price discrimination itself.

These competition concerns are likely to be alleviated, if BW removes these differentials, or justifies them in relation to the costs imposed on BW's business. A possible way to achieve this would be to operate a tariff scheme, whereby negotiation over fee levels is largely removed and BW's connection charges are set *ex ante* and published. Under such a scheme, BW could still offer discounts to some operators provided that they have time-limits, there is a reasonable prospect of the third-party business being profitable without the existence of the discount in the future, and they are non-discriminatory and publicised.

6.2 Pricing policy

The review of existing practice (see section 2) highlighted that managers are following the guidelines they are given for pricing moorings. Their response to excess levels of demand is to seek to increase supply in the first instance, and increase prices thereafter. As the case studies and the mooring prices survey indicated that there is evidence that this approach may be leading to systematic underpricing of BW moorings relative to private-sector moorings in similar locations. This is evidenced by long waiting lists at BW moorings sites, and an apparent systematic divergence between BW prices for moorings and private mooring provider prices in the region of 13% to almost 60%.

The review of alternative pricing policy options rejected cost-based measures on the grounds that they would not necessarily recover all of BW's costs in many cases, and/or they require what may

amount to an arbitrary judgement about how much of the joint costs of canal operation should be allocated to the moorings business. The review also rejected Ramsey-style pricing on the grounds that it is linked to cost-based pricing, and therefore suffers from the same problems; in addition, it rejected pricing with respect to alternatives because of the competition policy concerns it raises.

In conclusion, it seems that scarcity pricing is the most appropriate pricing method for BW to adopt in its moorings business. This is similar to the current method, but, as noted above, it is likely to require prices to rise in the short run in many areas, if the price differences uncovered are due to systematic underpricing, rather than due to systematic quality differences. Part of this rise could be achieved by removing the 10% prompt payment discount that is currently offered by BW

However, adopting scarcity pricing may raise competition policy concerns in some locations, since (as was noted in section 6.1), BW's moorings business is likely to be found to be dominant in several geographical locations. Consequently, if BW uses scarcity pricing, it needs to be careful not to constrain the supply of BW or third-party moorings. Continuing the current policy of encouraging all types of moorings, both BW and non-BW in all locations, wherever possible, is likely to be sufficient to alleviate this concern. Finally, while scarcity pricing will result in effective price discrimination, this does not raise significant competition concerns, in contrast to the upstream market where price discrimination does. The key difference is that the scarcity pricing reflects the supply and demand balance in the downstream market, and, provided that BW is not artificially constraining supply in any way, this type of price discrimination does not create distortions.

Appendix 1: Questionnaire

British Waterways

Moorings Study Questionnaire

OXERA

Strictly Confidential

Tel: + 44 (0) 1865 253000, Fax: + 44 (0) 1865 251172

March 16th 2004

Introduction

Our consultant will contact you to arrange a suitable time for a telephone interview. In advance of this interview, we would be grateful if you could complete the following questionnaire and have it ready for the interview. We have aimed to make this as quick as possible for you to complete by using a multiple-choice approach. During the telephone interview, the consultant will discuss with you the reasons behind your response.

Setting Mooring Prices

BW recommended a ten-step process for reviewing prices

These questions relate to the 'Annual Review of Long Term Moorings Prices: Managers' Briefing for April 2004 Revisions', which sets out the procedures for price setting. A copy of this document is enclosed for your ease of reference.

- How useful, overall, did you find this briefing note?

Not at all useful				Very useful
1	2	3	4	5

- How closely did you follow the ten-step 'mechanics of price setting' process (page 4 of the document)?

Used as a rough guide			Tried to follow to the letter	
1	2	3	4	5

A.1 Market definition

- How much price variation is there across your region (comparing like for like in terms of facilities and mooring-site type)?

Little or no variation			More than 10% between lowest and highest	
1	2	3	4	5

- How much do you know about the distance that mooring customers travel from home to mooring site?

  Nothing at all Some knowledge Quite good knowledge Good knowledge

A.2 Locating other mooring providers

- How many alternative suppliers are there within your region?

  Not sure Less than 5 5–10 10–20 More than 20

- Approximately what proportion of boats with long-term moorings in your area is located at sites managed by BW?

  20% or less 20–39% 40–59% 60–79% 80% or more

- Which of the following information do you hold on your competitors?
  - Price? yes / no
  - Numbers of berths? yes / no
  - Berth occupancy? yes / no
  - Facilities/customer service? yes / no

A.3 Strengths, weaknesses, opportunities and threats (SWOT) analysis

- Do you use a standard list of strengths and weaknesses? yes / no

A.4 Changes in quality of BW moorings since the last price review

- How important are the following quality factors to your pricing decision?
  - Facilities (eg, pumpout)?

    Not considered Very important

    1 2 3 4 5
  - Security?

    Not considered Very important

    1 2 3 4 5
  - Attractiveness of the local environment?

    Not considered Very important

    1 2 3 4 5
  - Location on the waterway?

    Not considered Very important

    1 2 3 4 5

A.5 Increases in supply

- How far ahead do you consider increases in supply of moorings in the neighbourhood when setting the price?

Up to 6 months Up to 1 year Up to 2 years More than 2 years

- Do you consider both BW and non-BW increases in supply?

  Both BW and non-BW BW only Non-BW only

A.6 Historical occupancy and waiting list levels

- What percentage of your current BW moorings capacity is used?

  Less than 50% 50–69% 70–89% 90% or more

- What is your response to a waiting list?
  - Do you raise prices on existing BW moorings? yes / no
  - Do you increase the supply of BW moorings? yes / no

- How long does it take to add a new supply of moorings?
  - Online moorings?

    Less than 6 months Less than 1 year Less than 2 years More than 2 years

  - New marinas?

    Less than 6 months Less than 1 year Less than 2 years More than 2 years

A.7 Different customer types

- Do you offer discounts to particular customer types? yes / no
- Do you offer mooring warden contracts to some customers? yes / no

A.8 Disruptions and other factors reducing a moorings value

- Do you offer price reductions for disruptions in your region? yes / no

A.9 Phased price increases

- When you identify a need for a significant price increase, do you phase the increase over a number of years?
  a. for all customers?
  b. just for existing customers?
- Over how many years do you phase the increase in this way?

A.10 Wider strategy

- Do you take any other considerations into account in the pricing decision? yes / no

B. Final pricing decision

- Please rate the importance of each of the ten-steps in your pricing decision:

Factor		Not very important				Very important
1.	Market definition	1	2	3	4	5
2.	Locating other mooring providers	1	2	3	4	5
3.	Strengths, weaknesses, opportunities and threats (SWOT) analysis	1	2	3	4	5
4.	Changes in quality of BW moorings	1	2	3	4	5
5.	Increases in supply	1	2	3	4	5
6.	Historical occupancy and waiting-list levels	1	2	3	4	5
7.	Different customer types	1	2	3	4	5
8.	Disruptions and other factors reducing a moorings value	1	2	3	4	5
9.	Phased price increases	1	2	3	4	5
10.	Wider strategy	1	2	3	4	5

C. Prompt payment discount

- BW offers a 10% prompt payment discount on mooring fees. Which price do you look at in making the comparison with the market?

  The undiscounted price The discounted price

Supply of Moorings by BW

D. Adding and removing <u>online</u> moorings

- What factors influence your decisions about adding and removing online moorings? Please rank their importance

  – The views of towpath visitors? (Eg, possible dislike of long lines of boats?)

  Not considered Very important
  1 2 3 4 5

  – The views of boaters? (Eg, the impact of online mooring on navigation speed, etc.)

  Not considered Very important
  1 2 3 4 5

  – The impact of the online moorings on the profitability of other sites (Eg, removing online mooring to ensure boats transfer to offline sites with vacancies)

  Not considered Very important
  1 2 3 4 5

– Other reasons?

Not considered				Very important
1	2	3	4	5

E. Investment in offline mooring and new marina facilities

- Do you follow a standard procedure for setting the canal connection fee? Or is this done on an individual basis?

Standard procedure	Individual basis or individual negotiations

Supply of Moorings by Third Parties

F. Commenting on planning applications for marinas

- Do you comment on planning applications by third parties to build new marinas on your waterway?
  – yes / no

Appendix 2: Questionnaire Respondents

The following BW personnel were interviewed about the practice of setting BW mooring prices, using the questionnaire in Appendix 1 as the basis for questions:

- Julia Moore, South East;
- Sam Morris, West Midlands;
- Peter Moore and Tony Harvey, Central Shires;
- Michael Goodenough, South West;
- Jim Stirling, Scotland;
- Leon Shouksmith and Keith Ellis, Yorkshire;
- Amanda Moring, London;
- Debbie Lumb, North West
- Alan Powell, Wales and Border Counties;
- Nigel Sheppard, East Midlands.

Appendix 3: Separation of BW's Marina Business

BW's marinas have recently been transferred to British Waterways Marinas Limited (BWML), a separate but wholly owned, subsidiary of BW. Consequently, the pricing decisions for marina-based mooring locations are no longer taken by BW. The marinas were transferred to BWML to help to clarify BW's dual role as:

- navigation authority;
- marina owner and operator.

The separation is intended to ensure equality of treatment of all marina operators, both private and BWML, by BW. BW has issued a public protocol document making clear the management separation between the two businesses, and that BW will treat BWML in the same manner as commercial operators of marinas.[12]

Several key areas are of interest in this protocol document.

- *Accounting separation*—separating the marinas business means that it will reports its accounts separately. This has the advantage of making clear that BW does not provide BWML with a subsidy, which would allow BWML to compete on an unfair basis with other marina operators. However, the key issue from a competition perspective is that standard transfer prices are charged to BWML—ie, there is no discrimination between BWML-operated marinas and third-party marinas.

- *Planning permission*—BW is a statutory consultee on applications for planning permission to build new marinas. BWML's planning applications will be treated in the same manner as commercial operators' applications.

- *Goods and services*—the provision of all goods and services from BW to BWML or vice versa, including site leases and network connections, should be equivalent to those offered to commercial operators, or reflect their fair economic cost. This helps to ensure that BW does not offer any more favourable terms to BWML than to any of its competitors, thereby implicitly subsidising BWML.

- *Information*—BWML shall not be party to BW-held information to which other commercial marina operators are not party. This means that BWML will not have any special information with which to plan its business to which other moorings providers would not have access.

BW's compliance with the provisions of the protocol are open to challenge by third parties via BW's internal complaints procedure. If the matter cannot be resolved, the third party can appeal to the Waterways Ombudsman. Ultimately, BW's compliance with the protocol could also be examined by the Office of Fair Trading as part of a competition-policy investigation.

[12] BW (undated), 'Protocol for Marina Business'.

Appendix 4: Mooring Prices Survey

In order to gain a better understanding of the private mooring prices in different locations on the BW canal network, OXERA undertook a mooring prices survey. This involved contacting/attempting to contact over 150 private mooring providers to obtain price quotations. These were then compared with BW prices in similar locations. The results of this analysis are shown in the case studies (section 3).

A4.1 Price data on BW moorings

Price data on BW moorings was primarily obtained from the BW publication 'Long Term Moorings Prices 2003/04', and combined with data available on BW's website.[13] 82 prices were used in the final analysis, although more were available. These additional price quotations were not used primarily because suitable private comparators were not available, making a comparison impossible.

All BW mooring price data is presented in a standard format; quotations are £ per metre (although a minority are per berth), per year, including VAT, exclusive of the 10% prompt payment discount. This standard format is adopted in the analysis in section 3, although prices are shown both including and excluding the 10% prompt payment discount to highlight its impact. Where prices were quoted per berth a 13m boat-length was used to convert into a price per metre.

A4.2 Price data on private moorings

Price data on private moorings is not as readily available as for BW's moorings ; therefore, OXERA undertook a survey of private moorings providers. A BW online directory of mooring sites was used as the primary source for contact information, which yielded 152 private mooring sites in the four case study areas. [14] All of these were contacted in a telephone survey (carried out in early and mid June 2004) and price quotations were obtained from 42 of these, giving a response rate of approximately 28%. In the telephone survey, BW was not identified directly, although the respondent was generally made aware that the price quotation was being sought for a general survey of mooring prices, and that the query was not from a prospective moorer. Common reasons for not receiving a price quotation were an unwillingness to give price quotations for surveys, an unwillingness to give price quotations when moorings were already full, and insufficient/incorrect contact details being listed on the online database.

Private mooring prices were not presented in a standard format. For example, some quotations were given in £ per metre, while others were £ per foot, or £ per berth; some included VAT, others excluded it, and others were from businesses that fell below the VAT threshold,[15] and therefore did

[13] See http://www.waterwaynetwork.com/site/SearchforMoorings_2766.asp.
[14] http://www.waterwaynetwork.com/site/SearchforMoorings_2766.asp
[15] For most businesses operating solely within the UK, the threshold for VAT registration is a turnover in excess of £58,000 per annum. See HM Customs and Excise (2002) 'Notice 700/1: Should I be Registered for VAT?', May.

not have to charge VAT.[16] To allow a comparison, all private moorings prices were put in the same standard format used by BW when presenting mooring prices: £ per metre, per year, including VAT, inclusive of any prompt payment discounts. Where prices were quoted per berth, a 13m boat-length was used to convert into a price per metre.

[16] These observations were classified as effectively including VAT for the standardisation procedure since VAT should not be added to these prices.