OFFICE OF FAIR TRADING

dti
Department of Trade and Industry

Switching costs

Economic Discussion Paper 5

Part one: Economic models and policy implications

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A report prepared for the Office of Fair Trading and the Department of Trade and industry by National Economic Research Associates

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1 EXECUTIVE SUMMARY

1.1 The subject matter of this report is switching costs. Switching costs can be defined as the real or perceived costs that are incurred when changing supplier but which are not incurred by remaining with the current supplier. Switching costs arise in a variety of everyday situations ranging from early redemption penalties when changing mortgage suppliers, to the uncertainty costs faced with trying an untested brand that may or may not be suitable.

1.2 Switching costs mean that if a customer purchases your product today, then all other things being equal they are also likely to purchase your product tomorrow. The presence of such switching costs can explain many commonly observed business practices. They can explain why businesses appear so concerned with their market share as the presence of switching costs can mean that market share matters. They can also explain why firms give generous introductory offers to new customers.

1.3 Switching costs impact on the structure of prices. Switching costs allow firms to price above cost to consumers once they have purchased the product and are 'locked-in', as the consumer would incur a cost to changing supplier. As firms realise that they can price above cost to customers once they are locked-in, then these customers become extremely valuable. As a result, competition can mean that firms price very low, even below cost to attract new customers. This 'bargain then rip-off' pricing pattern is characteristic of many markets with switching costs.

1.4 When firms can price discriminate between old and new customers then firms will charge high prices to locked-in customers and low prices to new ones. If firms cannot price discriminate but are constrained to charge a single price to all customers, then when setting prices the firm has to balance the incentive to price high to extract the rewards from its installed customer base, with the incentive to price low to attract new customers who will be valuable in the future. The result of this is that a firm's price depends on its market share and on the stage of growth of a market. A firm with a high market share is more likely to find that the incentive to 'harvest' the rewards from its current customer base outweighs the incentive to 'invest' by pricing low to obtain new customers. If a market is in a rapidly growing phase then future profits may appear large relative to today's, so

the incentive to invest may outweigh the incentive to harvest, even for large firms.

1.5 Although switching costs have clear implications for the price structure, they do not necessarily raise the average price *level* over time. If firms expect that each new customer that purchases their product leads to £*X* in profits on follow-on sales, then it makes sense to offer that customer a discount on the product of up to £*X* to purchase the product in the first place. In that case, the *ex-post* rip-off equals the *ex-ante* bargain and the average price level over time is unaffected. This result arises only under specific conditions. Uncertainty, or liquidity constraints faced by firms, can mean that perfect 'refunding in advance' does not occur and so average price levels can be raised.

1.6 Switching costs also have implications for market dynamics. They intensify competition in start-up markets as firms compete for customer bases to exploit in the future but mollify competition in more mature markets where most customers are already locked-in to a supplier.

1.7 Entry is also affected by switching costs but not necessarily in the way that one would expect. Entry is obviously difficult in a mature market with high switching costs where most customers are already locked-in to a supplier. However, moderate switching costs can actually be conducive to entry as they make incumbents less likely to react aggressively to new entry. In cases where switching costs raise the profitability of markets, then they also encourage entry

1.8 As switching costs can, under certain conditions, make markets more profitable, and can raise barriers to entry then it can be worthwhile for firms to create them. Firms can make their products incompatible with those from other firms, can impose exclusivity contracts on consumers or can create pricing schemes that give incentives for repeat purchase. Such practices can have adverse consequences when practised by a dominant firm, or when there are 'feedback' mechanisms such as 'network effects' that mean that a high market share in itself makes the firm more attractive to new customers. By raising barriers to entry, such switching costs can distort the competitive process when practised by firms with market power.

Measurement of switching costs

1.9 Contrary perhaps to initial perceptions, the level of switching in a market is not necessarily a good indication of the presence or importance of switching costs. It is perfectly possible for there to be a low level of switching suppliers even if switching costs are low as for example, prices may adjust to pre-empt switching. Instead of focusing on the rate of switching alone, we recommend two other methods of identifying and measuring switching costs. If firms cannot price discriminate between old and new customers, then a substantial difference in the choices of old and new customers may be indicative of the presence of switching costs, as all other things being equal, old and new customers would be expected to choose the same suppliers in the same proportions. When firms can price discriminate then a large difference between the prices charged to old and new customers of the same firm can be taken as indicative of a market with switching costs.

Competition policy

1.10 Whilst switching costs affect how competition operates in a market, they do not *necessarily* make markets less competitive. Switching costs can intensify competition in growing markets but even in more mature markets, the softened competition once customers are locked-in may have been, at least in part, compensated for by previously aggressive *ex-ante* competition. Switching costs can also provide an incentive for innovation as they can act like a patent in ensuring that the rewards of innovation are not dissipated by imitators.

1.11 In considering any competition policy or other regulatory intervention in markets with switching costs, it is extremely important to take a dynamic perspective. Switching costs may cause firms to price below cost to customers before they are locked-in and above cost thereafter. A static assessment may find the firm guilty of predatory pricing to new customers and excessive pricing to old customers, whereas a more dynamic analysis would have found that the two cancelled each other out and 'two wrongs make a right'. In undertaking this analysis, a consideration of the factors (listed in paragraph 4.31) which limit the ability of firms to compensate customers for the lock-in should also be part of the full analysis. Moreover, as switching costs frequently arise in innovation markets, then

the level of risk involved in the initial investment should be taken into account when assessing the level of profits from a successful innovation.

1.12 *However, competition problems can arise in markets with switching costs, just as in any other market, and the presence of switching costs can have implications for how competition policy is assessed in these markets.* Switching costs have implications for the incentives and feasibility of collusion. To the extent that switching costs reduce the intensity of competition in mature markets, then they may reduce the incentive to collude as the incremental gains from collusion may not be large. However, switching costs may increase the sustainability of collusion as to the extent that large price cuts are necessary for customers to switch suppliers such cuts may be easily observed by competitors. For related reasons, switching costs may undermine the severity of any retaliation for deviation from the collusive agreement, as they make punishment difficult and very costly for the punishers. *The impact of switching costs on the feasibility of collusion is consequently indeterminate.*

1.13 Switching costs may have particular importance in abuse of dominance cases. The impact of switching costs on price structures means that particular caution needs to be exercised by authorities when investigating pricing abuses. Pricing below cost may not be predatory once follow-on sales have been taken into account and seemingly high prices to locked-in customers may no longer appear excessive once intense competition before the customers were committed is taken into account. A dominant firm may also create switching costs that have the effect of foreclosing competitors from the market, through so-called loyalty rebates or exclusionary contracts. In these cases the onus should be on the dominant firm to show any pro-competitive benefits outweigh the potential exclusionary effects.

Merger control

1.14 Switching costs have some important implications for merger control. In assessing any merger, it is important to identify the competitive constraints that limit firms' prices to their current levels and to assess whether and to what extent the merger relaxes those competitive constraints. In markets with switching costs, these competitive constraints are likely to come disproportionately from two related sources, *ex-ante* competition for customers' business and competition

from smaller firms and consequently, these two areas should receive careful attention in any merger assessment. These two factors mean that market shares based on total.stock (as opposed to shares based on new business) may not be a good reflection of the intensity and importance of competitors in the market.

1.15 In assessing mergers with switching costs, authorities should consequently place most attention on preserving competition for new business and should recognise that competition from small firms may be disproportionately important.

Remedies

1.16 In most cases the existence of switching costs is relatively benign as they will often not be sufficiently large to disrupt the operation of competition and no intervention will be required. However, in some cases switching costs do raise legitimate public policy concerns. We have noted three reasons why the authority may be concerned – concerns about the impact of switching costs on the mechanics of competition, concerns that switching costs have raised the average price level, or concerns over the structure of prices that result from switching costs. Of these three, we believe that only the former two (which are mostly analogous) are legitimate grounds for intervention. Although there may be inefficiencies caused by a 'bargain then rip-off' price structure, we do not see grounds for intervention on consumer welfare grounds if the average price level over time is unaffected.

1.17 However, if *ex-ante* competition does not compensate for the *ex-post* rents, then some form of intervention may be appropriate. We have suggested some remedies, tailored to the type of switching cost that could help in reducing or removing the detriment to consumer welfare caused by the switching cost. These remedies are focused on the mechanics of competition and particularly on increasing the effectiveness of *ex-ante* competition.

Report strategy and structure

1.18 This report has been prepared by NERA at the request of the Office of Fair Trading and addresses the ways in which switching costs affect how markets work. In preparing this report we have been conscious of several different aims of the OFT.

1.19 First, the report should consolidate the results of the past 15 years of academic research on how switching costs affect markets.

1.20 Second, the report should be both accessible to non-economists, whilst also of interest to the academic community.

1.21 Third, the report should give practical guidance on switching costs for OFT staff (both economists and non-economists) to use when considering market investigations and assessing cases.

1.22 Fourth, the report should improve the OFT's understanding of how switching costs may interact with other factors (e.g. market power or collusion) to inform OFT enforcement.

1.23 Fifth, the report should provide reasoned suggestions on what the OFT can do to alleviate any potential detriment caused by switching costs, and where it would be worthwhile doing so.

The annexes

1.24 Our report is divided into two volumes, the main report is contained in volume one and the annexes are in volume two. The main report is written in a narrative form with the aim of being accessible to all, whilst the annexes are aimed at a more specialised audience. There are three annexes, which are intended as an integral part of the report.

ANNEXE A REVIEW OF THE ACADEMIC LITERATURE

1.25 This annexe contains a thorough review of the literature, aimed principally at economists. This annexe reviews and draws the main conclusions from the academic literature on switching costs. The annexe is intended as a 'back-up' for the main report and analyses in detail the main academic papers on switching costs. We would advise readers looking for more information on a particular aspect of switching costs to consult this annexe. The material reviewed in this annexe is the foundation for the rest of the report.

ANNEXE B EMPIRICAL METHODS

1.26 This annexe contains an assessment of the empirical methods the OFT could use to analyse markets in which switching costs were present. In the main report the intuition behind the different techniques is presented and their relative merits and an outline of the data requirements needed is discussed. This annexe contains a more technical guide to the econometric techniques, including an outline of the underlying econometric models and how the technique should be applied. The intuition behind these techniques is summarised in Chapter 6 of the main report.

ANNEXE C CASE STUDIES

1.27 This annexe contains four case studies in order to show how switching costs can be identified and analysed. We have chosen a variety of cases to illustrate different aspects of how switching costs can affect markets. In each case study we analyse how the particular switching costs affect that market and also the effectiveness and appropriateness of any past regulatory action to reduce switching costs. The four case studies are:

1. Frequent flyer programs
2. UK retail gas and electricity markets
3. The mobile phone sector
4. Medical services

The main report

1.28 In the main report we have used the material provided in the annexes to provide a practical, accessible paper. At the request of the OFT and DTI, we have focused our report on the implications of switching costs for consumer welfare, although we have occasionally also noted the impact of switching costs on other forms of welfare function.

CHAPTER 2 – INTRODUCTION

1.29 Chapter 2 introduces the concepts of switching costs and details the many different varieties of switching costs that appear in markets.

CHAPTER 3 – COMPETITION IN MARKETS WITH SWITCHING COSTS: SOME REAL EXAMPLES

1.30 The presence of switching costs affects the nature and intensity of competition between firms. The presence of switching costs creates diametrically opposite incentives for firms. Switching costs give firms an incentive to price high to exploit their locked-in base but also to price low to acquire a larger customer base to exploit in the future. This chapter presents a short review of some real-life examples of markets with switching costs and some of the perhaps surprising results that can arise. This chapter does not discuss the economic theory which is reviewed in Chapter 4.

CHAPTER 4 – THE ECONOMICS OF SWITCHING COSTS

1.31 Chapter 4 draws the main conclusions from the Literature Review Annexe, and summarises them in an accessible way. This chapter reviews the main conclusions from the literature on how switching costs affect competition, price paths, barriers to entry, product differentiation and how they can have surprising results.

1.32 For the convenience of the reader, we have chosen not to include extensive references to the academic literature in this chapter. Instead, we have indicated in an endnote for each section the relevant part of the Literature Review Annexe (Annexe A) that the section draws upon. Readers who wish to know more about a particular issue are advised to consult the relevant section of Annexe A and the papers referred to there.

CHAPTER 5 – SWITCHING COSTS AND EXCLUSIONARY CONDUCT

1.33 In this chapter we look at the ways in which firms may seek to create switching costs as a means of raising barriers to entry and excluding rivals from the market. Firms may offer discount schemes that create costs for customers to switch to other suppliers, they may impose exclusionary terms on contracts or they may choose to make their products incompatible with those of rivals.

CHAPTER 6 – METHODS OF IDENTIFYING AND MEASURING SWITCHING COSTS

1.34 Chapter 6 looks at ways of identifying and measuring switching costs. We have divided this chapter into two parts. In the first part we look at non-econometric

methods of identifying and measuring markets with switching costs, including measurements of the numbers of customers switching suppliers. In the second part, we review some econometric techniques that have been suggested to identity and measure switching costs. These techniques include direct methods that look at individual customer preferences and indirect methods that look at more aggregate data.

CHAPTER 7 – SWITCHING COSTS AND COMPETITION POLICY

1.35 Chapters 7 and 8 look at the role for regulatory authorities in markets with switching costs. Chapter 7 considers the implications switching costs have for competition policy investigations, such as mergers, cartels and abuse of dominance cases.

CHAPTER 8 – ROLE FOR REGULATORY AUTHORITIES

1.36 Chapter 8 looks more generally at the conditions under which switching costs may themselves cause detriments to consumer welfare and what actions the OFT (as part of a market investigation) or a sectoral regulator could take to remedy the situation. We look at the cost of such measures and the potential for counterproductive results. We see if there are any general lessons that can be learned on the appropriateness of particular remedies.