

HOW SWITCHING COSTS AFFECT THE WAY IN WHICH MARKETS WORK

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Cillian Byrnes explores the various forms of switching costs and their functions. He analyses the effects that switching costs have on the way markets operate, with particular regard to price strategies, product differentiation and entry deterrence and the repercussions these have for consumers. He ends by making policy recommendations, but has the good sense to question their workability.

Introduction

Switching costs are the costs a consumer or firm incurs when they transfer their business from one supplier to another. Klemperer (1995) identifies four types of switching costs. First, there are physical switching costs. An example of this is if a consumer invests in a Nintendo games console. This usually restricts the consumer to purchasing Nintendo computer games as, if he/she wants to buy games from Sega, he/she will have to incur the physical switching cost of investing in Sega's console as Sega's games are incompatible with the Nintendo console. Due to the cost of consoles consumers generally purchase one or the other (Garcia-Marinosa, 2001). Another example would be the cost of switching one's bank account. This would involve closing your existing account and opening a new account with a new bank. Learning costs are the second type of switching costs. This involves learning to use new brands of products e.g. if you switch word processing packages it will take time to learn how to use the new package. When purchasing a new product there is an uncertainty about the quality of the product. Consumers don't know how good a product is until after they have used it e.g. medicine. Thus switching to a new product introduces uncertainty. The next category of switching costs consists of those that are artificially created. There are numerous examples of these including loyalty card schemes in super markets, discount coupons for products and frequent flyer programmes run by airlines. The thinking behind these schemes is to lock consumers into purchasing the firm's product. The final type is psychological switching costs. These may not have a rational economic explanation. Consumers

sometimes feel a brand loyalty toward the product they consume although there is no compulsion for them to feel this. Brehm suggests another reason: “Social psychologists cite evidence that people change their own preferences in favour of products that they have previously chosen or been given in order to reduce ‘cognitive dissonance’”[Brehm (1956), Klemperer (1995)]. This means that people like to stick with the things that they know. In the course of this essay I intend to examine switching costs in detail. I will look at how they affect how markets work. Endogenous switching costs will be discussed and I shall identify if switching costs cause detriment to consumers. Thereafter, the various effects of switching costs in different markets will be investigated. The final two sections deal with actions that need to be taken, the measurement of switching costs and what remedies could be implemented to counter the harm they cause.

Effect on how markets work

Pricing strategies

Beggs and Klemperer (1995) identify a change in pricing strategies in markets with switching costs as opposed to markets without switching costs. The key to switching costs is that once a consumer has purchased a product, he/she is locked into purchasing this product unless they are willing to pay the switching cost resulting from changing products. This means that firms can charge higher prices to their existing customers than the prices of their competitors as long as the price difference is less than or equal to the switching cost. In equilibrium a firm wants to charge a price where the price difference between their price and their rivals equals the switching cost. Here the consumer is indifferent between switching or not and will rationally stay.

Beggs and Klemperer (1995) use a model of a multi-period duopoly to illustrate what happens in markets with switching costs. Firms know that once they have consumers locked in they can increase the profit they make on them. This means that in the first period, competition between the firms is intense, as both want this later benefit. Therefore first period prices would be lower than in a market without switching costs where unaltered competition is persistent. In the resulting periods firms then increase their prices to make their profit on the locked in consumers. Thus, future period prices are higher in this market than one without switching costs. As a result of this price differentiation, average price is probably higher in markets with switching costs than markets without switching costs. First period prices are lower but in all the resulting periods prices are higher in the market with switching costs as firms are earning profit from their customers. As an average,

the higher resulting period prices outweigh the first period price meaning average price is higher in a market with switching costs than one without.

This ability to price differentiate leaves firms with a dilemma. In a growing market they face a choice between charging high prices to earn profit off their existing customers or attracting new customers by lowering their prices. It is assumed that the incentive to exploit existing customers dominates. This is because firms want to make profit where they can. Building market share is also important but this may not always result in future profits e.g. demand for the product could collapse. Thus firms will want to cash in to some extent when they can. The ability to discriminate between existing and new customers solves this problem and this is discussed further in section four. If firms know they can exploit customers once they are locked in, rational consumers will know this also. This makes consumers less responsive to price cuts in the first period as they know this leads to higher prices in the long run. Therefore first period prices wouldn't be as low as if all consumers were myopic.

Product differentiation

Product differentiation is a tool firms employ to dampen competition. It creates a market for their product on its own. Switching costs artificially differentiate functionally identical products. The products are no longer the same as for a consumer to buy the other product he/she has to incur the switching costs of changing from their current product. Firms therefore like switching costs as they dampen the level of competition they face. Klemperer (1995) found the surprising result that firms prefer head to head competition with identical products rather than competition with differentiated products. This is because after the initial period firms can exert their market power on their existing consumers. With product differentiation this market power isn't guaranteed, as consumers may be willing to switch products, as they now prefer the characteristics of the competing product than the one they currently use. Switching costs suggest that multi-product firms are the way to compete. Consumers don't want to incur shopping or transaction costs i.e. the costs resulting from going out and actually purchasing a product, but they also value variety. Hence it is logical that consumers would like to buy several different products from the one firm as opposed to having to get the same bundle of goods by going to for example four different suppliers. Now consumers obtain variety without having to incur the same level of switching costs. This gives multi-product firms an advantage over single product firms.

“The Airbus Consortium has explained that its reason for producing a full line of aircraft is that ‘without a family of aeroplanes to rival Boeing’s, Airbus would be at a serious disadvantage in the market.’” Economist 3/9/1988, Klemperer (1995)

Entry deterrence

Klemperer (1987b) looked at how switching costs could deter entry. The growth rate of a market is the crucial issue. By this I mean the amount of new customers entering the market. In a stagnant or low growth market, switching costs deter entry as the incumbent has the majority of the market covered and its profit margin equals the switching cost. Firms would have to run a loss to enter the market and it can be assumed that the incumbent will react aggressively to new entrants. In a market with above average growth middle range switching costs are the most conducive to entry. Low switching costs deter entry, as firms will have to run a loss in the initial entry period. Profits are lower as there is less scope to exploit locked in consumers. Incumbents are therefore more likely to invest in attracting new customers i.e. reacting aggressively to entrants. With high switching costs, firms earn good profit margins and may be willing to forego these temporarily in order to preserve their monopoly and so are hostile to entrants. With medium size switching costs, firms may be less aggressive towards entrants as they do not deem it worth their while to fight entrants as there is a low payoff and so they skim profits off their existing customers, leaving the new customers to the entrant.

Switching costs help explain limit pricing. In the first period when the firm is a monopolist, they charge a price below marginal cost so the market is fully covered. Firms don't enter as they feel the incumbent will continue this strategy. Even if the incumbent raises price to make a profit, the potential entrant feels the incumbent will revert to this strategy if they enter, so at best zero profits will be earned. This is a rational belief as a firm invests in excess capacity as a signal of strategic behaviour. It is sending a message to potential entrants that if they enter they will make it extremely difficult for the entrant to gain market share. The firm would not have invested in this excess capacity if it didn't plan to use it if its threat was questioned i.e. there was a new entrant to its market. However, there could come a time when the incumbent earns more by accommodating entry rather than trying to prevent it. If a potential entrant believes this to be the case they will enter the market. Limit over-pricing is the opposite. Here the incumbent charges a high price, which gives them a small customer base and entry is deterred due to the threat of the incumbent slashing their price. This is particularly relevant where a market grows significantly in the second period or later. As with limit pricing a firm limit over-pricing may give up this strategy when it becomes more profitable to facilitate entry. Until this is the case limit over-pricing is a credible threat to potential entrants and so it is rational for potential entrants to believe a limit over-pricer will cut its price should the potential entrant enter their market. Therefore limit pricing or limit over-pricing will only be practised when it increases the profits of the incumbent in the long-run. From this section it can be seen that switching costs do significantly affect how markets work.

Endogenous switching costs and consumer detriment

Endogenous switching costs

Endogenous switching costs result from an investment in a piece of equipment which is only compatible with complementary products produced by the same manufacturer. The switching cost is to be able to use complements produced by an alternative manufacturer. You need to purchase the initial product produced by this new manufacturer although you already have the initial product produced by their competitor. The Sega/Nintendo example in the introduction is a good illustration of this. Endogenous switching costs enable firms to exploit consumers. They charge a low price for the initial product and a high price for the complement e.g. a low price for a console with a high price for games. In the first period a consumer buys a Sega console, thus in the second period they face a choice between a Sega game or a Nintendo console with a Nintendo game. Provided the Sega game costs less than the Nintendo bundle the consumer will usually stay with Sega products unless they have a significant change in taste. Surprisingly it can be better for firms to have compatible products rather than incompatible ones. This dampens first period competition. If the cost of achieving compatibility is small, this benefit may outweigh the cost. In the second period both firms now have access to larger markets that could outweigh the now heightened competition. An example of this could be CD producers and sound systems; all brands of CDs work in all brands of sound systems.

Firms can manipulate switching costs by creating them artificially and then using them to create a price difference between their price and that of their competitors as outlined in section two. They can do this by making their products incompatible with competitors or by giving discounts to loyal customers e.g. supermarket value club cards etc.

Consumer detriment

Switching costs cause detriment to consumers when they enable firms to charge them above the competitive price for a product, that is where firms are able to earn super normal profits, as customers would lose out from switching to competitors, as the price difference is less than the switching cost they would incur. They may also deter entry, which means there is less pressure on the incumbent to innovate and thus consumers lose out on potential improvements of products. In some cases they don't cause detriment. In some industries a manufacturer may need to invest significantly in a retail outlet and thus they impose a restriction on the retailer they employ e.g. they can only sell products supplied by them or they will be sued. Here the switching cost of the retailer to switch supplier outweighs any benefit. A good example of this is a petrol station. Statoil invest in a petrol station, which is

expensive. They need to employ an exclusive purchasing agreement or in the future the retailer could switch to a competitor who can supply petrol cheaper as they don't have the investment costs of Statoil. If Statoil couldn't impose this restriction then they wouldn't invest in a petrol station as immediately after investing the retailer would switch to a competitor. Consumers benefit from this investment, thus in this case switching costs are to the benefit of rather than to the detriment of consumers.

Different effects in different markets

Switching costs have their greatest effect in markets where firms are able to discriminate between first time and repeat purchasers. This enables firms to charge a low introductory price to new customers while simultaneously charging a high price to repeat customers. Technical markets facilitate discrimination e.g. photocopiers are relatively cheap but the toner required to use them is subject to a large mark-up. Each photocopier is only compatible with its manufacturer's toner. Less technical industries such as the clothes industry can't do this and thus use tools such as advertising to differentiate their product. Markets with frequent repeat purchasers are able to discriminate also. For example supermarkets use loyalty cards to give loyal customers discounts. New customers obviously can't avail of these benefits immediately. This encourages consumers to concentrate their business with a single supermarket. Once supermarkets have enough consumers locked in they can exploit them. This scheme would not work for one-off or rare purchases, e.g. furniture, as customers would not purchase often enough to earn loyalty points. Another point about these markets is that switching costs are lower here, as the market may have changed in the interim between purchases, thus the new purchase may be independent of the initial purchase.

Switching costs have different effects when there are different quantities of goods being purchased. Switching costs are the same whether you purchase 1 unit or 1000 units. Thus switching costs per unit are lower for bulk buys than individual purchases. Switching could be more prevalent in these bulk purchase markets as there is more incentive to switch, as the cost per unit is lower e.g. buying a domestic computer versus buying 100 planks of timber.

Measurement of switching costs

In technical markets Garcia Marinosa (2001) identified the switching cost as that of replicating the initial purchase. Thus the switching costs in this market would be period one costs plus the transactions cost of buying the second piece of initial equipment. However it is difficult to put a figure on these shopping costs. In transport economics one of the benefits of a new motorway are time savings. These are given a monetary value by giving labour related time savings a value in accordance with an individual's rate of pay. Leisure time savings are

evaluated according to the value the individual gives his/her leisure. This can be applied to measuring switching costs. All switching costs should be identified. Non-monetary costs could be given a time cost that could then be turned into a monetary cost e.g. the time it takes to close your account and open one with a new bank. A monetary cost would be the cost of telephoning the bank while a non-monetary cost would be the time spent making the telephone call.

Switching costs can be observed by analysing a market. In equilibrium the price difference between the incumbent and entrant equals the switching cost. (Nilssen, 1997) This can be used to analyse a market. The price differences in a mature duopoly with stable market shares can be explained by switching costs. Thus this difference could be evaluated as the switching cost for this market. The drawback of this method is that the firms need to be identical for this to hold.

Identifying markets where switching costs are a problem requires the profit levels of firms in a market to be known. Switching costs can only be causing detriment in a market where super normal profits are being earned. The next step is to identify how firms are able to maintain this level of profit. Some markets owe this to phenomena such as monopoly power, collusion or non-price competition. Markets in which switching costs are identified as the reason for super normal constitute a problem. Looking at markets informally could alert people's suspicions to switching costs being a problem. If this happens a formal, more detailed analysis could be employed to find out what exactly is happening in a market. If a problem is found then solutions need to be implemented.

Remedies

Klemperer (1995) suggests three methods to achieve reduce switching costs. The first is the standardisation of products. This is a synonym for compatibility. This means that complementary components will be compatible with all brands of primary products not just their own manufacturers. As discussed earlier this reduces switching costs. The second tool is a policy of quality regulation. This would set a minimum level of quality that all products have to attain or else they won't be allowed on the market. This takes some of the uncertainty out of switching products, as the consumer now knows the product has a certain level of quality. The last method he suggests is the promotion of consumer information magazines like the magazine 'Which?' These give consumers plenty of information about products. These magazines reduce consumers search costs significantly; hence their switching costs fall also. Lower switching costs reduce firms' ability to exploit consumers.

We have looked at how switching costs affect pricing strategies. From this a possible remedy would be to restrict firms' pricing strategies. Market studies

would be undertaken to find out what the competitive price in a market is. The regulator could then add a mark-up he deemed appropriate e.g. 20% to obtain the maximum price firms are allowed to charge for the product. The mark-up is necessary, as entry must not be deterred completely. This price ceiling softens first period competition as the future benefit of market share is lessened so prices are higher in period one and lower in subsequent periods. The price fall after period one should outweigh the first period price rise. This solution would require a benevolent social planner. In reality it would be extremely difficult to get firms to agree to this price cap. If it was enforced the investment could be moved abroad where these restrictions don't exist. Also it would be difficult to have accurate estimates of the competitive price in a market, as access to data would prove problematic.

Finally industry studies cost money. For these to be prudent the benefits that they generate need to outweigh the costs i.e. it would be unwise to invest \$100 million in a project that generates a \$50 million benefit.

Conclusion

To conclude, I feel convinced that switching costs do affect the way in which markets operate. Switching costs facilitate the exploitation of consumers already committed to a product. Consumers also suffer a variety loss, as with switching costs firms prefer head-to-head competition, which gives them greater market power in the long run. Moreover, switching costs deter potential entrants as they cause the incumbent to be more aggressive to entrants than they would be without switching costs. Endogenous switching costs were discussed and found to exist in technical markets. Switching costs do not always cause detriment. In some cases they enable firms to undertake beneficial investment that without switching costs would not have been possible. Switching costs have different levels of importance for different markets but are at their most effective when firms can discriminate between new and old customers.

Measurement of switching costs is tricky but explaining profit levels and price differences is a useful rule of thumb. There is no quick fix for the harm caused by switching costs. Close study of markets is required to obtain the information needed to regulate the market. It is evident that switching costs are not of negligible value in a number of industries with banking being a prime example. The way forward in my opinion is to build up information on switching costs. This necessitates industry studies and consumer surveys. This will lead to the regulation of markets and enable consumers to obtain information they can use to decide on purchases.

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