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Competition with Reciprocity in a Two-Sided Market - A Primer

The concept of ‘two-sided markets’ was pioneered by the French economists, Rochet and Tirole, in 2001 to help explain the market structure of payment card systems. Since then, there has been a burgeoning literature on this subject to help explain how competition can result in scenarios where price doesn’t necessarily equal marginal cost. Despite the obvious relevance to collecting societies, who provide a two-sided platform for rights holders and users, the theory rarely gets discussed in the exchanges with DG Internal Market and DG Competition. Here, Will Page provides a ‘primer’ on the theory to make us better placed to understand where competition law and collecting societies might be misunderstanding one another.

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Evans, David S. and Schmalensee, Richard, “Industrial Organization of Markets with Two-Sided Platforms” .
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Sometimes, cynics are inclined to argue that economics is just common sense made complicated. Should this argument hold up, then it exposes a serious dereliction of our duty: that is, making our subject understandable to the ordinary person. So before working through the complexity of ‘two-sided markets’, let’s begin with a really simple analogy from a singles-orientated night club.

A heterosexual singles-oriented nightclub provides a platform where men and women can meet and search for dates. The club needs to get two groups of customers, guys and girls, on board its platform to have a service to offer either one. Moreover, the relative proportion of guys and girls matters: too few (or too many) of one will not attract the other.

‘Pricing’ is one way to get the balance right - hence free entry or cheaper drinks for the girls. ‘Rationing’ is another way: where the bouncer might pick (attractive) women out of the queue outside disproportionately and fast track their entrance. Either way, the dating club offers a platform which ‘enables’ two separate groups who value interaction to capture the various benefits from ‘trading’ with each other. By taking these interactions into account, the success of the club can be increased. An economist describes this as “output-increasing” and therefore good for consumers, and the bar!

With that example in mind, let’s refer back to Rochet and Tirole (2001), who were first to offer a formal definition: “A market is two-sided if the platform can affect the volume of transactions by charging more to one side of the market and reducing the price paid by the other side by an equal amount; in other words, the price structure matters, and platforms must design it so as to bring both sides on board.” More generally, we can think of two-sided platforms as arising in situations where transaction costs prevent the two-sides from solving this exchange directly. Moreover, there might be externalities (or additional benefits) which a platform generates to either side that they could not generate themselves.

We can quickly capture the relevance of this theory to the role of the collecting society by going back to its origins in France, circa 1850. Here, the society provided a platform which allowed restaurants on one side to compensate composers on the other. Not only did the platform allow the transaction to take place more efficiently (reduced transaction costs) but also more effectively (better enforcement). But before we consider how the regulatory experience of other markets might influence the thinking of collecting societies, let’s go back to basics - and work through a text-book examples of a two-sided market at work.

**Adobe versus Microsoft:
Following the Side that Matters Most**

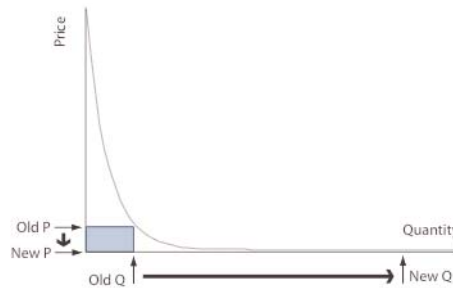
Adobe and Microsoft allow us to illustrate an important point: in two-sided markets users on each side typically require very different functionality from their common platform. Adobe's portable document format (PDF) did not succeed until Adobe priced the PDF reader at zero, substantially increasing sales of PDF writers. Relative to Apple computer's initial pricing, Microsoft also steeply discounted systems developer toolkits (SDKs) leading to more rapid development of applications for MS Windows.

We can illustrate these strategies by using standard supply and demand analysis. Recall, if a platform was to ignore 'network effects', then consider how it might price both sides. In the top charts, this is shown to be the price points that maximise the areas of the light and dark blue rectangles, (price x quantity), under each demand curve. Adobe initially used this approach when it launched PDF and charged for both reader and writer software.

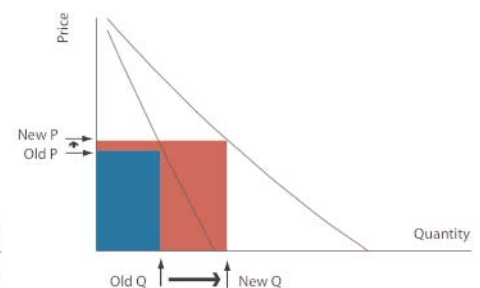
In two-sided markets, adoption on one side of the network drives adoption on the other side; hence the overall 'size of the pie' can be increased - as shown in the arrows and emerging red area top-right. Put simply, when Adobe changed its pricing strategy and made its reader freely available, positive network effects caused demand curves (on the 'developer' side) to shift outward in response to growth in the increased user base (on the 'consumer' side). In illustrative terms, the loss of the light blue segment on the left was overshadowed by the gain of the red segment on the right. In plain English, they subsidised the reader and charged a premium to the writer - as that's where the money was to be found.

In contrast to Adobe's strategy, Microsoft provides a useful case study - as what they found out (much to Apple's detriment) that the money was on the other side - that of the creator. The thinking goes like this: if building a bigger network is one reason to subsidise adoption, then stimulating value adding innovations is the other. Consider, for example, the value of an operating system with no applications.

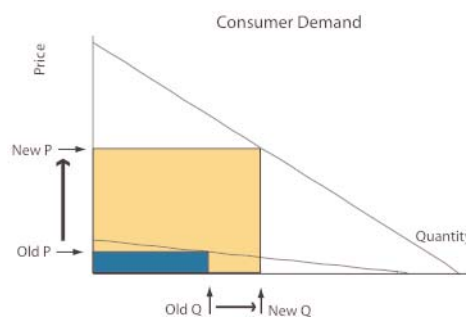
Adobe subsidises the consumer...



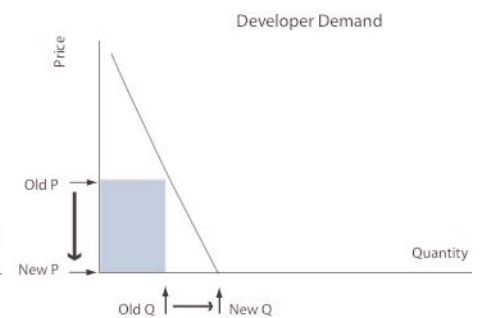
...by charging a premium to the creator



Microsoft charges a premium to the consumer...



... by subsidising the creator



Microsoft's strategy is illustrated above: as long as the revenue gained (the beige box on the left) exceeds the revenue lost (the light blue box on the right), a discounting strategy is profitable. While Apple initially tried to charge both sides of the market, like Adobe did, Microsoft uncovered a second pricing rule: subsidise those who add platform value. In this context, consumers, not developers are the money side.

At this stage, it's worth considering which case study is best suited to a collecting society. Arguably, Microsoft offers the better analogy - for developers read 'rights holders', whose membership fee and barriers to enter is negligible. As mentioned before, consider the value of a society (operating system) with no rights (applications). We can now extend our thinking further, by considering the pricing strategies that a society can deploy and the risks associated with it.

Firstly, platform managers must choose the right price to charge each group in a two-sided network. For example, a collecting society may wish to adjust the fixed membership fee,

commission rates (which will encompass numerous transfer payments) and the price of the intellectual property that's being licensed. As a further complication, unlike conventional markets, intellectual property is a 'good' which finds itself significantly removed from the 'price equals marginal cost' rule of competition. Similarly, when the platform is a monopoly, the impact of regulatory constraints must not be overlooked.

Nevertheless, the basic supply and demand forces will prevail; regardless of which price is adjusted. In terms of valuing the intellectual property, pricing upwards might attract more members whereas pricing downwards might lead to exodus of rights. Consider, too, the membership fee and commission rates which, in conventional economics, might be deemed as a sunk and operational cost respectively. In developing competition amongst two-sided markets, the rules change. Instead of downward price competition, competitive platforms might increase their charges based on services offered - a race to claim to be top, for service.

Before we leave this theoretical backdrop and begin to consider network effects both in theory, and practice, it is worth pausing for thought and considering the uniqueness of collecting societies when trying to apply two-sided market thinking. For instance, collecting societies are not only designed on a not-for-profit basis, but owe a fiduciary duty to act in the best interests of their members. Further, the operational cost of licensing, collecting and distributing royalties is borne completely by the rights holder in the form of commission. Hence, whilst collecting societies could be said to be two-sided in the economic sense, a legal interpretation might be more one-sided in that they are 'duty bound' by one side of the market, the rights holder.

'Network Effects': a Two-Sided Definition?

Let's get back to theory - what 'two-sided markets' really provides is an additional definition of 'network effects'. In the context of this primer on two-sided markets, 'Network effects' simply means one person's demand depends on the demand from others. 'Two-sided markets' are situations where network effects occur between two different types of users. So, to help us refine these 'network effects' further, (and help us get to grips with our reality of competition with reciprocity), two case studies are provided below:

- **FINANCIAL EXCHANGES** have two groups of customers, who can generally be considered "investors" and "companies." The exchange helps investors and companies search for feasible contracts - that is where the buyer and seller could enter into a mutually advantageous trade, and for the best prices, that is where the buyer is paying as little as possible and the seller receiving as much as possible. Some exchanges like eBay charge only one side whereas others, such as auction houses, charge to both sides. [Note: Interestingly, internet matchmaking services charge everyone the same].
- **PAYMENT CARD SYSTEMS** only work if buyers and sellers are willing to use it. Diners Club started the first two-sided payment system in 1950. Before then stores issued payment cards to their customers for use only at their stores.

Diners Club began by getting a set of restaurants to agree to take its card for payment; that is to agree to let Diners Club reimburse the restaurant for the meal tab and then in turn collect the money from the cardholder. It also persuaded individuals to take its card and use it for payment. Starting with a small base in Manhattan it grew quickly throughout the United States and other countries. Diners Club initially charged restaurants seven percent of the meal tab; card-holders had to pay an annual fee, which was offset in part by the float they received as a result of having to pay their bills only once a month. As a result Diners Club earned most of its revenue - and most likely all of its gross margin - from merchants.

We can draw an interesting parable between the governance structure of copyright collection societies and that of financial exchanges and payment card systems. In many cases, they are examples of two-sided platforms that are organised as not-for-profit cooperatives (although many payment card operators have recently moved away from mutual arrangements). Here, the platform adopts various rules and regulations for the members and take charge of certain centralised functions including determining the right price structure across the two types of markets. This self-imposed aspect of regulation can cause further complexity to the external regulator when assessing market power, coordinated practices and unilateral practices. Bearing in the mind the unique structure of collecting societies, the added relevance of each of these regulatory concepts is set out below:

- **MARKET DEFINITION AND MARKET POWER:** As already explained, regulators must be increasingly careful when using the conventional 'price equals marginal cost' relationship for one side of the market for evaluating either market power, claims of predatory pricing, or excessive pricing under EC law. As a result, one must be cautious of generalised assumptions.
- **COORDINATED PRACTICES:** The economics of two-sided platforms is useful for assessing whether there is an efficiency rationale behind an agreement over prices. Put simply, should the regulatory authorities find evidence of a

price fix on one side, it should consider evidence of the costs and benefits to the other side. For example, the impact of the price structure may be to increase usage of the system - which is the opposite outcome from the general concern of a coordinated practice.

- **UNILATERAL PRACTICES:** Here, the concept of predatory and excessive pricing, tying and exclusive dealing become more ambiguous. For example, forcing exclusive dealing on one side might actually help a platform gain - or develop - market power on the other side - providing more benefits, than costs, to the initial consumer.

Recognising Reciprocity in a Two-Sided Market

We've seen how competition can work with two-sided markets, but have skimmed over that other word in the title of this paper: 'reciprocity'. In the world of collecting societies, this refers to the contractual permission by one of two societies of the validity of licences or privileges granted by the other. This 'mutual dependence' aspect facing collecting societies can be teased out by going back to our examples of two-sided markets - Financial Exchanges and Transaction Systems - and drawing upon examples of competition where reciprocity is present:

- **FINANCIAL EXCHANGES:** When European financial exchanges make bids for each other, the regulatory concerns often hinge over the ownership of clearing services. By contrast, the United States now has six competitive equity options exchanges where the clearing services are all linked electronically. Whilst the linking of all US stock exchanges is expected to happen 'by force', it's worth using two-sided theory to ask if this will develop competition or force the market back towards a natural monopoly?
- **PAYMENT CARD SYSTEMS:** The NaBanco versus Visa case allowed the courts to recognise several of the key features of what have become known as two-sided platforms. At stake was the interchange fee, which NaBanco argued was price fixing, and violation of the Sherman Act. Visa argued, successfully, that unlike classic price-fixing, the ability to set an interchange fee was a

mechanism to allocate costs between the issuing and acquiring sides of the business and enhanced output by, among other things, limiting opportunistic behaviour by individual members and avoiding the chaos of bilateral negotiations among thousands of member banks. [Note: The European Commission investigated MasterCard's intra-EEA Multilateral Interchange Fees]

Reciprocity is evident in both examples. Whenever one of Europe's financial exchanges attempt to 'buy' another, this upsets (and is often blocked by) the reciprocal nature of the 'status quo' equilibrium. Similarly, payment cards have long managed to grow their market(s) by recognising the reciprocal benefits of cooperation outweigh their own private costs. It's worth highlighting another 'en vogue' business concept here, that of co-opetition. This focuses on cooperation between companies in imperfectly competitive markets. One of the most revealing examples of this is open source software companies, as they all contribute to the production of a software pool that anyone can use as a base for their own business model.

Reciprocity, or reciprocal arrangements, exists across many of the business functions in collective licensing. Whilst these have been broadly accepted by the regulators in providing a system that offers a fair return for rights holders and users, the territorial aspects of those arrangements has recently been the subject of a negative decision by the European Commission. In the context of developing a European single market, this leads to the question of whether this type of arrangement (or level of reciprocity) should be maintained in a competitive world.

How far has theory come, and where does it need to go next?

We've now equipped ourselves with a refinement of network effects, by understanding where the application of established anti-trust rules may be assisted by a new approach. Similarly, we can view our current reciprocal network in a wider context, and consider if this 'type' of reciprocal arrangement is hindering further integration, causing harm through self interest and holding back the ability to grow the market, regardless of which side. Consequently, we're better placed to understand where competition law

and collecting societies might be misunderstanding one another.

For collecting societies, the most relevant of the emerging issues to come from the academic literature to date is where more than one platform is available to do the same task. Consider how platforms might differentiate themselves from each other by choosing particular levels of quality (what is known as "vertical differentiation") or particular features and prices that appeal to particular groups of customers (what is known as "horizontal differentiation"). The latter can result in customers choosing to join and use several platforms - a phenomenon that Rochet and Tirole have called "multi-homing".

"Multi-homing", as a concept, is particularly relevant to the writers, publishers and societies in both theory and practice, even though it will inevitably mean different things to different parties. This is because customers might find certain features of different competing platforms attractive and therefore rely on several. For example, many cardholders carry multiple cards, although they may tend to use a favourite one most often and Merchants generally accept more than one scheme. Other two-sided platforms have multi-homing only on one side, as most end-users rely on a single software platform for their personal computers, while many developers write for several platforms. Of course, conventional text book economic thinking would suggest that the more multihoming, the more competition there is.

How would the rights holders, users and societies view 'multi-homing', and how might the regulator react, and then given that likely reaction what might the two markets and Europe's twenty six platforms actually do?

This is likely to prove the biggest challenge in the application of the emerging theory to the applied practice of collective rights management due to the natural bias - in the form of exclusivity which copyright embodies - towards rights holders which exists in their make up. Might multi-homing work in conventional markets, but fail where exclusivity is such an important foundation of the 'good' that's being traded? Or is there is a version of multi-homing already in existence, where publishers appoint sub-publishers who join local societies but all based on defined territorial splits?

To conclude this primer, it needs to be stressed that the concept of two-sided markets needs to be filed under a 'fledgling status' - both theory and practice. For example, Rochet and Tirole title their latest work, published in 2006, as 'a progress report' - whilst Europe's rights holders, users and regulators struggle with the concept of 'competition' and how best a market should be organised. This can be frustrating, in that neither the academic nor the professional has all the answers, but also presents an opportunity - as the proactive amongst us can work together to find them.