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Credit Card Payment Processing in Electronic Commerce: An Analysis of the Bucket Pricing Strategy

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Abstract

Credit cards have been the dominant payment method for the electronic commerce retail industry. However, online retailers, especially the small to medium ones, continue to be disadvantaged by the seemingly arbitrary bucket pricing strategy implemented by the credit card processing companies. We address the following research question: "Can the credit card processors continue to economically justify the use of bucket pricing structure, especially considering the increased competition within the industry and from competing payment alternatives?" We use an economic model as a basis of our analyses and discussions.

Keywords: Credit card payments; credit card processing; bucket pricing; tiered pricing; electronic commerce; online retailers.

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Introduction

Electronic commerce (e-commerce) and online retail transactions continue to grow. A recent survey suggests that one third of the online retailers have gained market share from their brick-and-mortar competitors despite of the depressed economy and the slowing sales growth for the retail industry as a whole [Swerdlow, 2009]. Similarly, data on the 2008 online holiday season shows that trends in online spending outperformed offline in several key product categories [comScore, 2009].

Traditionally, credit cards have been the dominant payment method for the Internet retail industry. Online credit card transactions will continue to increase and are predicted to account for 40% of the forecasted $268 billion in online transactions by 2013 [Javelin Strategy & Research, 2008]. Furthermore, according to many experts, credit cards will continue to be the safest option for e-commerce due to the more comprehensive online fraud protection and zero liability policies offered by major card issuers [Simon, 2006].

Despite the continued success, some analysts predict that in the future online consumers may use credit cards less often due to competition from other payment methods such as stored value cards and e-mail payments (e.g., eBay's PayPal). They argue that the gradual decline of online credit card payments is primarily due to the fact that the alternative payment options are generally cheaper for retailers [Simon, 2006], with Celent analysts noting that credit cards are simply too costly relative to other payment options [Celent, 2008].

The history of the credit card industry goes as far back as 1958 when Bank of America Corporation introduced the first bank credit card, BankAmericard. Within a few years, the Interbank Card Association launched a competing card. BankAmericard later became Visa U.S.A., whereas Interbank Card Association developed into MasterCard Worldwide. In 1971,

BankAmericard established an *interchange fee*, which was explained as compensation for the risk of card-issuing banks, to be paid by the merchant's bank to the cardholder's bank. The fee was initially set at 1.95% per transaction. MasterCard followed suit. In 1979, National Bancard Corp. (Nabanco) sued Visa U.S.A, alleging that setting interchange rates could be considered price fixing. In 1986, a federal appeals court rejected Nabanco's claim, observing that the card industry is nascent, so price-fixing and other antitrust allegations did not hold up. At about the same time, Visa and MasterCard began "incentive pricing" of interchange fees to encourage merchant adoption of electronic card capture.

In 1996, retailers filed a class-action lawsuit against Visa and MasterCard challenging the "honor all cards" rule, which required merchants accepting any MasterCard and Visa products to accept all such products. In 1998, the U.S. Department of Justice filed antitrust actions against MasterCard and Visa over the so-called "exclusionary rules" that prohibited member banks from issuing nonbank cards, like those of American Express Co. and Discover Financial Services, LLC. In 2001, a federal court ruled against the bankcard assocations' exclusionary rules. This ruling was later upheld by the U.S. Supreme Court.

In 2005, Visa and MasterCard announced new interchange fee schedules, which tied assessments to the types of cards used. For example, each transaction using cards tied to rewards programs were assessed higher interchange rates. Retailers soon challenged this new fee policy, arguing that in many cases the fees equaled or exceeded their profits. Stories on interchange fees and other concerns raised by merchants have continued to appear regularly in the mainstream press, including publications such as *BusinessWeek*, *The Wall Street Journal* and *USA Today*.

To accept credit card payments, retailers use the services of credit card processing companies. The U.S. credit card processing industry is highly automated and highly

concentrated, with 40 percent of its $10 billion revenues generated by the top four companies. The industry includes fewer than 500 companies. Major companies include First Data Corporation, Total System Services, Global Payments, and Bank of America's BA Merchant Services. As services are sold mainly based on cost, the profitability of a credit card processing company depends very much on efficient operations. Large companies have big economies of scale in processing and can provide more services, while small companies try to compete by specializing in industries and providing custom services.

Credit card processing companies provide transaction services to merchants that accept credit card payments and to banks that issue credit cards. Services to merchants include authorizing, capturing, and settling merchants' credit and debit card transactions, and handling chargebacks (which occur when a consumer disputes a charge and charges it back to the merchant). In addition, credit card processing companies also sell or lease point-of-sale (POS) terminals. Services to card issuers include transaction authorization and posting, statement generation and printing, and card embossing. Large credit card processing companies provide services to both sides of the transaction, i.e., both merchant and card issuing services; whereas small companies usually offer either one of the services, and may specialize in particular markets such as retail cards or credit unions.

There are two types of fees involved in credit card processing. The first type is the *interchange fee*, which is set by the credit card networks and split between the networks and the credit card issuing banks. The interchange fee consists of a percentage of the transaction amount plus a fixed per-transaction fee. The exact percentage varies according to a set of specific criteria which include the type of credit card, the type of product or service purchased, the card issuer, and other factors (e.g., see [Visa, 2009]). The second type of fee is the markup charged by the

credit card processing company that serves the merchant (or the merchant's bank, i.e., the bank that provides the *merchant account*, allowing the merchant to accept credit cards). This additional fee, which goes to the merchant's bank, is known in the credit card processing industry as *merchant discount*.

The vast majority of merchant's banks operate on a tiered pricing structure. Tiered merchant accounts have a base rate called the qualified rate. In addition, there are additional tiers with different levels of surcharge added to the qualified rate, resulting in different final rates for different tiers. These different tiers are referred to as *rate buckets* or simply *buckets*. Merchant's banks have the ability to dictate which rate bucket the various credit card payment transactions will qualify to. This makes it difficult for a merchant to accurately compare rates and fees from different merchant's banks.

A simpler and more transparent structure is the *interchange plus pricing*, where the merchants pay the exact interchange fee plus a flat markup to their merchant's banks. Unlike tiered pricing that can have numerous (as many as 12 or more) rate categories, interchange plus pricing only recognizes two rates: the interchange markup percentage and an authorization fee. Despite its simplicity, interchange plus pricing has been available mostly to merchants the process high volumes of credit card sales each month. This has put smaller online retailers at a disadvantage because they have to resort to the less desirable tiered pricing structure.

In this paper, we will try to address the following research question: "Can merchant's banks continue to economically justify the use of bucket pricing structure, especially considering the increased competition within the industry and from competing payment options?" We will use an economic model as a basis of our analyses and discussions.

Literature Review

It is common to see different buyers to pay different prices for the same products or services. In the airline industry, for example, it is almost always the case that different passengers on the same flight have paid different airfares for the same cabin class and service. Tiered pricing (or differential pricing) is considered as an efficient and reasonable response to the presence of economies of scale [Frank, 1983]. The basic idea is that economic efficiency requires that buyers pay prices that equal to the marginal costs of the products they purchase. However, when there are economies of scale, the cost of producing the last unit is less than the average cost of producing all units. Consequently, a firm that charges all buyers a price equal to the marginal cost would not be able to cover its total production cost. An alternative would be to set the price equal to the average cost; however, some price-sensitive buyers would likely be discouraged from purchasing the product. A better alternative would be to charge different prices to different buyers. In this case, if the firm could charge the price-sensitive buyers a price close to marginal cost and the other (less price-sensitive) buyers a higher price, then it would be able to cover its total cost.

The tiered pricing approach is clearly preferable to the alternative of setting a single price for all buyers in the present of economies of scale. However, when production exhibits constant returns (i.e., when marginal cost and average cost are the same), theoretically only in the presence of monopoly power will different buyers pay different prices for the same product. A firm that has market power and can segment its buyers into separate markets will be able to enhance its revenues by charging higher prices to relatively less price-sensitive buyers, and lower prices to those whose demands are more elastic [Frank, 1983; Salop, 1979; Spence, 1976]. In practice, differential pricing may also result from market imperfections, which include

incomplete information, irrational brand loyalties on the part of consumers, high transaction costs, and numerous legal and practical barriers. This kind of differential pricing is termed discriminatory pricing because it does not reflect real differences in production costs [Salop and Stiglitz, 1977; Shilony, 1977; Varian, 1980; Wilde and Schwartz, 1979].

Tiered pricing has been discussed and analyzed within various contexts in different industries, which include airline [e.g., Frank, 1983]; agricultural [e.g., Suzuki et al., 1994], advertising [e.g., Shen, 2002]; pharmaceutical [e.g., Danzon and Towse, 2003]; water resources [e.g., Brill et al., 1997; Glennon et al., 2005]; and academic journal industries [Bergstrom and Bergstrom, 2004].

In the context of information goods and digital product market, tiered or differential pricing has been used to explain product versioning. Shapiro and Varian (1998) maintain that versioning allows a firm to sell its information goods at a higher price to customers with higher willingness-to-pay, generating a large margin for the firm. In addition, it also enables the firm to sell the goods at a much lower price to consumers with lower willingness-to-pay due to the fact that information goods have a near zero marginal cost of production. In order to set different prices, however, the firm needs to make the features of the low-priced version of the product somewhat less attractive that those of the high-priced version.

In the context of website market, Riggins (2002) develops a differential pricing model to examine the monopolist's choice of content quality and price for a fee-based site targeted at high-type consumers (i.e., consumers with high willingness-to-pay) and the content quality level for a sponsored site offered free to both low- and high-type consumers. He shows how a reduction in the potential for advertising revenues results in lower content quality on the free site, but permits the seller to raise the fee charged to high-type consumers. In addition, the seller can increase

profits by making ads more attractive to either high- or low-type consumers, but rarely both at the same time.

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