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The pay-what-you-want business model: Warm glow revenues and endogenous price discrimination

R. Mark Isaac*, John P. Lightle, Douglas A. Norton

Department of Economics, Florida State University, United States

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ABSTRACT

We explore the potential benefits of an up-and-coming business model called "pay-what-you-want" in an environment where consumers experience a warm glow by patronizing a particular firm. We show that, given a social norm regarding minimum contributions, a pay-what-you-want firm should announce a minimum suggested contribution, which is positive—but smaller than the profit-maximizing single price—so as to benefit from "endogenous price discrimination," whereby consumers differentially contribute more than the suggested minimum. Furthermore, a pay-what-you-want scheme can improve market efficiency and, in special cases, generate more profit than a standard posted price scheme. These results are robust to alternate motivations for generosity, including gift-exchange.

1. Introduction

Within the last few years several news sources documented instances of an up-and-coming business model called "pay-what-you-want". The most publicized example occurred when Radiohead announced that their album *In Rainbows* could be downloaded at whatever price fans deemed reasonable. Restaurants, rental accommodations, and soccer clubs are also among those employing this business model. In fact, one pay-what-you-want (PWYW) Australian restaurant, Lentil as Anything, has expanded their enterprise from one to six locations since 2000 (Mantzaris, 2008). A recent and well publicized foray with the PWYW pricing scheme occurred when Panera Bread Company launched the "St. Louis Bread Company Cares Cafe" in Clayton, Missouri (Horovitz, 2010).[1] In a November 2010 press release, Panera announced the opening of a second PWYW restaurant in Dearborn, Michigan (and a planned opening in Portland, Oregon) claiming that "this expansion is the result of the concept's success in Clayton, Missouri" (Panera Cares, 2010).

In addition to these success stories, there is a rapidly growing literature on the PWYW business model. In a series of three field experiments, Kim, Natter, and Spann (2009) found that consumers gave a positive amount when asked to pay what they want as compensation for eating at a lunch buffet at a Persian restaurant, watching a movie at a cinema, or drinking a hot beverage. Furthermore, PWYW generated significantly more revenue than a posted-price benchmark for the Persian restaurant, but less than the benchmark for the cinema. The success of PWYW in the Persian restaurant, and not the cinema, suggests that characteristics of the firm itself, and the way its clientele values those characteristics, are key factors to the profitability of PWYW. More recent field experiments by Kim, Kaufmann, and Stegemann (2014) and Kim, Natter, and Spann (2014) further explore the way in which consumers decide to contribute to a PWYW firm. Furthermore, Schmidt, Spann, and Zeithammer (2014) use a laboratory experiment to show that PWYW pricing works better when there are no traditional posted-price firms in the market and the PWYW firm

* Corresponding author at: Department of Economics, Florida State University, 288 Bellamy Building, 113 Collegiate Loop, Tallahassee, FL 32306, United States. Tel.: +1 850 644 7081; fax: +1 850 644 4535.

E-mail address: misaac@fsu.edu, nortonnole@gmail.com (R.M. Isaac).

[1] The theory for this paper was written prior to Panera adopting this pricing scheme in Clayton, Missouri. In Section 2, we formulate our theory based on a "minimum suggested contribution," while Panera primes customers by handing them a receipt with the dollar amount customers are charged at a more conventional Panera restaurant. Our presentation continues with a minimum suggested contribution, but we believe that the method used by Panera, as well as several others methods, are viable ways for pay-what-you-want firms to operationalize the opportunity for endogenous price discrimination, and the qualitative results we present are unchanged.

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can act as a monopolist. In our paper, we will only consider a single monopolistic firm.

While the PWYW pricing scheme will certainly not supplant more traditional pricing schemes, we will present a rational choice model to examine its viability that builds on a customer's distinct values over the firm's product and for the firm itself. Specifically, we will argue that, while the success of PWYW may vary from case to case, the PWYW firm is not destined to failure. Instead, we derive circumstances in which a PWYW firm can exceed the profits of a related, more traditional monopoly benchmark.

One approach to a PWYW firm[2] would literally be that a publicly available donation box would provide any customer with the legal right to claim one unit of a good, e.g. a cup of coffee, for any donation $x \geq 0$. If an individual's valuation of a cup of coffee consisted of the usual intrinsic valuation, v_i, then the degenerate result would occur that everyone with $v_i > 0$ would claim a cup of coffee for free. Our model is more sophisticated in two respects. First, we separate the intrinsic valuation for the product itself, v_i, from a "warm glow" from contributing positively to the firm.[3] There are at least three reasons why the dual value might be appropriate:

1. *Group identity*: Customers develop ties to the firm as part of their identity and thus the warm glow is derived from their purchasing of the product from that specific firm. While this notion is simple, there is a growing consensus that identity and sense of self matter for economic decision-making. There are numerous situations in which normal theoretic exercises would yield different predictions if we did not consider identity (Akerlof and Kranton, 2000). In our case, it is clear that the success of some of these PWYW firms is outside the set of typical predictions. For example, the success of the Radiohead album has been attributed to how much the fans value the band itself (Ferguson, 2007). Therefore, the Radiohead success documents a phenomenon that is foreign to much of neoclassical economics: customers not only care about the benefit they receive from a good, but also that they are giving money to a firm (band, restaurant, sports club) with whom they identify.
2. *Charitable support*: The warm glow term could represent that customers have an additional value over related charitable activities of the firm. In a field experiment, Gneezy et al. (2010) report that Disney obtained the highest revenue in the pay-what-you-want pricing scheme when customers knew 50% of contributions would be donated to charity. Moreover, Panera Cares views their PWYW pricing a charitable act to those unable to afford higher prices.
3. *Existence support*: The idea that customers value the existence of a firm could be handled in different ways. One approach is to say that a forward-thinking consumer has a strategic incentive to support a PWYW firm in order to secure future benefits derived from the continued existence of the firm. This was shown formally by Fernandez and Nahata (2009), who use a dynamic model of interaction between consumers and a PWYW firm to show that PWYW can be a viable option. The payments in their model are based purely on self-interest, and therefore cannot be attributed to "warm glow" in the traditional sense. However, we believe that the future benefits of supporting the firm's existence, which are present in real world situations but not possible in our static model, can be reduced to a single benefit which the consumer enjoys immediately upon contributing, without altering any predictions of our model. Rather than model the self-interested future benefit as a separate component of the utility function, we will combine it with the rest of the "warm glow" incentives to contribute. Furthermore, some consumers may derive a direct psychological benefit from doing their part toward keeping a business afloat. In a threshold public goods experiment reported by Offerman, Sonnemans, and Schram, (1996), some subjects receive utility from the act of contributing itself. The continued existence of a PWYW firm is similar to a threshold public good and we expect some consumers experience a warm glow from helping achieve that goal. Finally, a consumer could benefit from the existence of a firm if they have direct preferences over the attributes of the owners (e.g. the "buy local" movement). Alchian (1950) argued that firms sometimes made decisions from a survivorship principle, that is, to earn enough money to proceed to the next period, and rational consumers must consider this when making a contribution.[4]

Secondly, we note that many PWYW pricing schemes adopt a "suggested donation." We believe that the existence of an explicit requested level of contribution suggests an in-place social norm for firms using PWYW.[5] Since our goal is to accurately model this institution, we will incorporate the underlying social norm that most[6] individuals will not claim a unit of the product without donating at least the amount suggested by the firm.

What is novel about our model is that it allows for customers to obtain a cup of coffee and rationally donate *more* than the suggested donation. Rational, heterogeneous customers will thus make a donation equal to or greater than the suggested donation of the firm. We call this phenomenon "endogenous price discrimination."[7] This differs from traditional first-degree price discrimination in that it does not depend upon the firm negotiating and extracting the maximum trading surplus from each customer on each unit. Rather, the task of the profit maximizing enterprise[8] is, somewhat akin to a single price monopolist, choosing a single parameter, in this case the minimal acceptable donation.

In Section 2 we formalize the model, including the nature of consumer preferences and the rational choice implications of these consumers operating in a world of a minimal acceptable contribution norm. Following that, we explore alternate profit maximization scenarios for the firms that take the rational decisions of warm glow consumers into account. We characterize the optimal minimum suggested donation and specifically compare it to a naïve benchmark in which a firm, not understanding the difference between customers' intrinsic and warm glow values, attempts to behave like a traditional single-price monopolist. In Section 3 we use specific market examples to demonstrate that (1) a PWYW firm can earn more revenue and generate more efficient outcomes than a traditional firm, and (2) a profit-maximizing PWYW firm should choose a suggested minimum donation which is below the monopoly benchmark price. In

[2] We use the term "firm" broadly to apply to profit and not-for-profit corporations, individual proprietorships, partnerships, informal charities, and so forth.

[3] The term "warm glow" (popularized by Andreoni [1990]) suggests that consumers gain utility from the act of patronizing a particular firm. In our model, warm glow is obtained *only* by patronizing the firm and cannot be achieved by an isolated donation. The assumption that individuals' incentives to donate are tied to receive something in return is supported empirically by Karlan and List (2008) and Falk (2007).

[4] The management of Calvin's Coffee Shop, a PWYW nonprofit entity in Tallahassee, Florida, placed a sign near their donation box which reads: "Like our coffee? Want us to stick around? ... Then please donate." This provides evidence that PWYW firms are attune to the fact that existence value motivates customers to donate.

[5] There is empirical support for the idea that minimum contribution norms can develop based on explicit suggestion (Galbiati and Vertova, 2008) or information about the past contributions of others (Shang and Croson, 2006).

[6] For the purposes of analysis, we will assume that *all* individuals will adhere to the minimum contribution norm in Sections 2 and 3. We postpone the analysis of the inclusion of free-riders (those who consume the good without paying for it) until Section 4.

[7] Coffee shops commonly use other forms of price discrimination, such as nonlinear pricing (McManus, 2007), which we abstract away from in the model by having a single homogeneous good.

[8] Following Norton (2010) we posit that not-for-profit enterprises may nevertheless maximize retained earnings; they are simply prohibited from distributing those earning to shareholders.