



Direct advertising and opt-in provisions: Policy and market implications

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ABSTRACT

This paper formulates a game of pricing and informative advertising with horizontally-differentiated products in which two firms, first, compete with mass advertising and, later, build a database using their historical sales records and compete by targeting the ads to their potential customers. We study market interaction under two types of direct advertising: opt-in advertising, where firms ask consumers for their consent to send them ads with information about new products, and direct advertising without permission, where sellers use consumer contact information without their explicit consent. We show that, compared to the case where firms only use mass media, the use of direct ads (with or without permission) results in an intertemporal reallocation of market power from the first to the second period and that, compared to opt-in advertising, direct advertising without permission results in lower or equal prices. We also evaluate the impact of a regulatory policy aimed at protecting consumer privacy by banning the use of direct advertising without permission in favor of opt-in advertising. We find that this policy lowers social welfare and, if the degree of product differentiation is sufficiently high (vs. low), it does not affect (vs. lowers) firm profits and lowers (vs. increases) consumer surplus.

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1. Introduction

The emergence of new information-transmission technologies has led to fundamental changes in firms' communication strategies. According to the marketing literature, sellers today tend to use *mass* advertising media to capture new clients, but use personal *direct* media when developing a relationship with existing customers. Effective direct advertising begins with a consumer database that includes an organized collection of comprehensive data about existing or prospective customers. On the basis of this information, marketers can target small groups of potential clients and promote their new products through personalized communication, thus providing firms a low-cost, efficient alternative for reaching their markets. This explains why database advertising has become increasingly important and is now extensively used by sellers.²

The most important forms of direct advertising include telemarketing and direct mail, which together account for 52% of all sales engendered by direct marketing (Kotler and Armstrong, 2013). These information transmission technologies use a telephone call, fax, SMS, postal mail³ or email to obtain an immediate response from customers and cultivate lasting relationships. Taking into account the old marketing adage of "it is easier to sell something to an existing customer than make a new one", marketers often achieve these goals simply by building a database with the contact details of their *existing* customers and using the database to send them direct advertising with information about new products or services. Against this background, it is interesting to investigate how the strategic use of direct advertising based on historical sales records can affect the functioning of the markets. Further, we are particularly interested in the policy aspects of database advertising. It is clear that the informative role of advertising and the high cost-efficiency of direct advertising make this marketing tool socially desirable. However, a fraction of consumers receiving, for example, telephone calls, may not be interested in the promoted products and consider such advertising intrusive, thus generating

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² According to the US Direct Marketing Association (DMA), in 2011, marketers spent \$163 billion on direct marketing, which accounted for 52.1% of all ad expenditures in the United States (see DMA's "Power of Direct Marketing Report").

³ The DMA reports that *offline* marketing channels, mainly direct-mail (non-catalog) and telephone marketing, account for the bulk of advertising dollars in 2016. However, DMA expects digital channels to continue increasing their share of the marketing budget in the future.

“nuisance costs”. These costs can have a strong negative impact on social welfare, so the protection of consumers’ privacy can justify government intervention. One regulatory solution can be to introduce an opt-in provision in the use of direct advertising, so that firms must ask consumers for their explicit consent to be included in the database and to send them messages, in return for valuable information about new products or services. From a social perspective, the advantage of opt-in advertising is that the audience of the campaign becomes highly qualified, thus mitigating the impact of nuisance costs. The aim of this paper is to provide a theoretical framework in which to investigate how the use of direct advertising, with and without opt-in provisions, can affect consumers and firms, to shed light on how public policies towards database advertising (e.g. to allow direct advertising without permission, or to ban this type of advertising with an opt-in provision) can affect the level of social welfare.

We formulate a model of price competition in which two firms sell horizontally-differentiated products. To accommodate direct advertising based on historical sales records into the model, we consider that sellers launch a succession of new products over time. Consumers are unaware of the existence and characteristics of the goods and firms use informative advertising to promote sales. For the sake of simplicity, we reduce the analysis to three stages, $\tau = 0, 1, 2$. In the first, sellers do not have the information necessary to target their ads, so they compete on price and reach consumers by using a TV or radio mass advertising campaign that covers the entire market and provides information about the existence of a new product, price, characteristics, etc. In $\tau = 1$, the informed consumers make their purchasing decisions, i.e. they decide whether or not to purchase a product and from which firm. Finally, in $\tau = 2$, firms launch a new product and compete by choosing their pricing and advertising strategies (mass advertising or direct advertising).

A model of database advertising based on historical sales records only makes sense if the firms’ intertemporal demands are correlated. We assume that the different goods produced by the two firms over time are oriented to the same group of potential consumers so, in order to generate repeat business, a firm has a high incentive to foster a relationship with its potential “regular” customers, that is to say, with those consumers who purchased its product in $\tau = 1$. This is done by taking advantage of the first sale to obtain a profile of the clients (name, address, telephone number, email, etc.) and create a database that in $\tau = 2$ can be used to send direct ads with information about new products or services.⁴ The distinctive feature of our model is that marketers can implement a direct advertising campaign in two different ways. One, they can send direct messages to all their past clients, without asking for their permission. We will refer to this advertising strategy as “*direct advertising without permission*”. The other way is to ask consumers for their consent to include their personal information in the database and send messages only to those clients who have given their explicit consent. We will refer to this advertising strategy as “*opt-in direct advertising*”. We assume that only a fraction of first-period buyers are interested in the second-period products and that consumers suffer a “nuisance cost” when they receive direct messages (e.g. telephone calls) informing them about the existence and characteristics of products in which they are not interested. We can interpret this as a “privacy cost”, which reflects the opportunity cost of the time spent in receiving and processing

the information transmitted by the commercial messages, and we assume that consumers have heterogeneous privacy costs. Clearly, the effectiveness of direct advertising without permission and opt-in advertising will be different. Whereas, in the first case, all first-period clients receive an ad, so all are exposed to the advertising campaign, with opt-in advertising, only a fraction of these consumers (with relatively low privacy cost) will give permission to be included in the database and only they will be reached by the corresponding advertising campaign. This explains that firms have a clear incentive to use direct advertising *without permission*, and the problem is that this type of advertising can generate high privacy costs, because consumers who are not interested in second-period products and have relatively high privacy costs receive undesired direct ads. Thus, consumer protection can justify government intervention aimed at reducing privacy costs by imposing an opt-in provision on the use of direct advertising. The issue is how does this provision affect consumers, firms, and the level of social welfare. To address these questions, the first phase of our work compares the functioning of the market under three competition scenarios: (i) sellers use only mass advertising: this case, which equals the full-information outcome, constitutes a reasonable benchmark against which we can compute the impact of database advertising on the market outcome, (ii) regulation (opt-in provision): in $\tau = 2$, sellers can use only mass advertising or opt-in direct advertising and (iii) no regulation: in $\tau = 2$, sellers can use any type of advertising (mass advertising or direct advertising with or without permission).

When firms employ direct advertising, the key point is that the use, in $\tau = 2$, of an in-house list with contact information about existing clients (with or without their permission) allows sellers to target their advertising campaigns to a distinct set of consumers, which fragments the market into local monopolies due to the information-differentiation that arises. Firms strategically anticipate this effect so, compared to the benchmark, they compete more aggressively for consumers in the initial period, that is, we prove that database advertising results in an intertemporal transfer of market power from $\tau = 0$ to $\tau = 2$. Interestingly, we find that firms could find it optimal to offer their first-period products at zero price. This can be interpreted as an aggressive introductory offer aimed at building a large customer base in $\tau = 1$, which allows sellers to better market their products in $\tau = 2$. Regarding profits, if first-period prices are positive, direct advertising (with or without permission) yields lower firm profits than does mass advertising, whereas, if first-period prices are zero, profits can increase. This means that firms may engage in a typical prisoner’s dilemma: both sellers are better off using only mass advertising but, in $\tau = 2$, they have a strong incentive to use their databases, indirectly generating more intense price competition in $\tau = 0$ and, as a result, lower intertemporal aggregate profits. Finally, we find that the pricing strategy and the level of profits can vary depending on whether firms use opt-in advertising or direct advertising without permission. We show that second-period prices coincide with the two types of direct advertising, while opt-in advertising yields higher (or equal) first-period prices and lower (or equal) aggregate firm profits.

The second phase is to evaluate a regulatory policy aimed at protecting consumer privacy by imposing an opt-in provision on the use of direct advertising. It is clear that opt-in advertising reduces consumer privacy costs, thus increasing welfare, but, under this type of advertising, a fraction of consumers refuse the offer to be included in the database and we prove that, compared to the socially-optimal solution, this fraction is too large. This generates a negative externality on firms and a quantity distortion in the product market, with the corresponding welfare loss. The key point, then, is which of these effects is dominant, and we find that a regulatory policy banning the use of direct advertising without

⁴ In-house lists with information about existing customers have been used by firms for a long time. For example, Kotler and Armstrong (1998) report that General Electric has constructed databases containing the purchasing record for electrodomestic goods of each customer. On the basis of this information, the firm has used direct mail to offer them a new electro-domestic or other item that can be used in combination with other products they have recently purchased.

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