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Ask or infer? Strategic implications of alternative learning approaches in customization

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ABSTRACT

Learning about a customer's preferences is a critical first step in the customization process. Broadly, firms adopt two alternative learning approaches: (1) ask, i.e., solicit preference information directly from the customer (*S-Learning*), or (2) infer, i.e., deduce preference information based on past observations of the customer as well as those of other customers (*O-Learning*). Most existing research on customization strategy focuses on a firm's marketing mix decisions, implicitly assuming away how the firm learns about customers. We contribute to this literature by examining how a firm's use of a specific learning approach impacts competition, particularly its rival's choice of learning approach. We find that O-Learning provides a credible signal for relaxing price competition, while S-Learning does not. Further, S-Learning by a firm creates a disincentive for rivals to also invest in S-Learning. We survey business customers and find significant evidence supporting our theory. We conclude with several managerial implications of our theory including how a firm can optimally select its learning strategy in order to impact its competitive environment.

1. Introduction

It is generally accepted that customizing products or services enables firms to increase profits and ensure customer loyalty (Peppers & Rogers, 1997; Brady, Kerwin, Welch, Lee, & Hof, 2000). The existing literature mainly examines the strategic implications of customization in terms of marketing mix decisions like pricing and promotion (Shaffer & Zhang, 1995, 2002; Chen & Iyer, 2002; Ansari & Mela, 2003). However, in the customization process, firms are faced with other decisions prior to those concerning the marketing mix. For example, a critical initial step in the customization process is learning about a customer's *ideal* product. Firms use different methods to learn about these preferences (Randall, Terwiesch, & Ulrich, 2005, 2007; Toubia, Simester, Hauser, & Dahan, 2003; Srikumar & Bhasker, 2004). We focus on the strategic implications of a firm's decision to 'ask' or to 'infer'—two broad approaches used in this critical 'learning' step (Murthi & Sarkar, 2003). In particular, we examine how employing a specific approach impacts competition and competitive strategy.

The following examples help illustrate the two fundamentally different approaches to learning customer preferences. At Nikeid.com, a customer designs an athletic shoe to his or her specifications, selecting each element of the shoe from the sole material to the shoelace color (Randall et al., 2005). At Pandora.com, based on the user's listening history, customized recommendations are made as to which new releases s/he would most enjoy (Moser, 2006). In both examples, the seller helps a customer identify his/her most preferred product. Both examples also require substantial investment on the part of the seller to learn about customers' preferences—Nikeid.com designs an interface that solicits information from customers in an efficient and effective manner; Pandora.com creates a database to track listening behavior, hires a team to classify new music as it is released, and develops an algorithm to ensure accurate recommendations. We label Nikeid.com's method *S-Learning*, where a firm asks customers for information *at the time of purchase* and products are customized based on this solicited information. 'Solicitations' can be done directly—as at Dell.com, where the customer designs his own laptop configuration—or indirectly, as Eleuria does by surveying a customer's preferences for fragrances and then offering a perfume that best satisfies her reported tastes (Randall et al., 2005). On the other hand, we label Pandora.com's approach *O-Learning*, where the firm solely relies on *previous* 'observations' and infers the customers' preferences. These 'observations' may be gathered through previous interactions with a specific customer and through interactions with other 'similar' customers. For instance, a firm that maintains a database consisting of personal purchase histories and click-stream data can use this knowledge to identify a potential user's most preferred product offering. Other examples using O-Learning include Amazon.com's offering customized book recommendations and the

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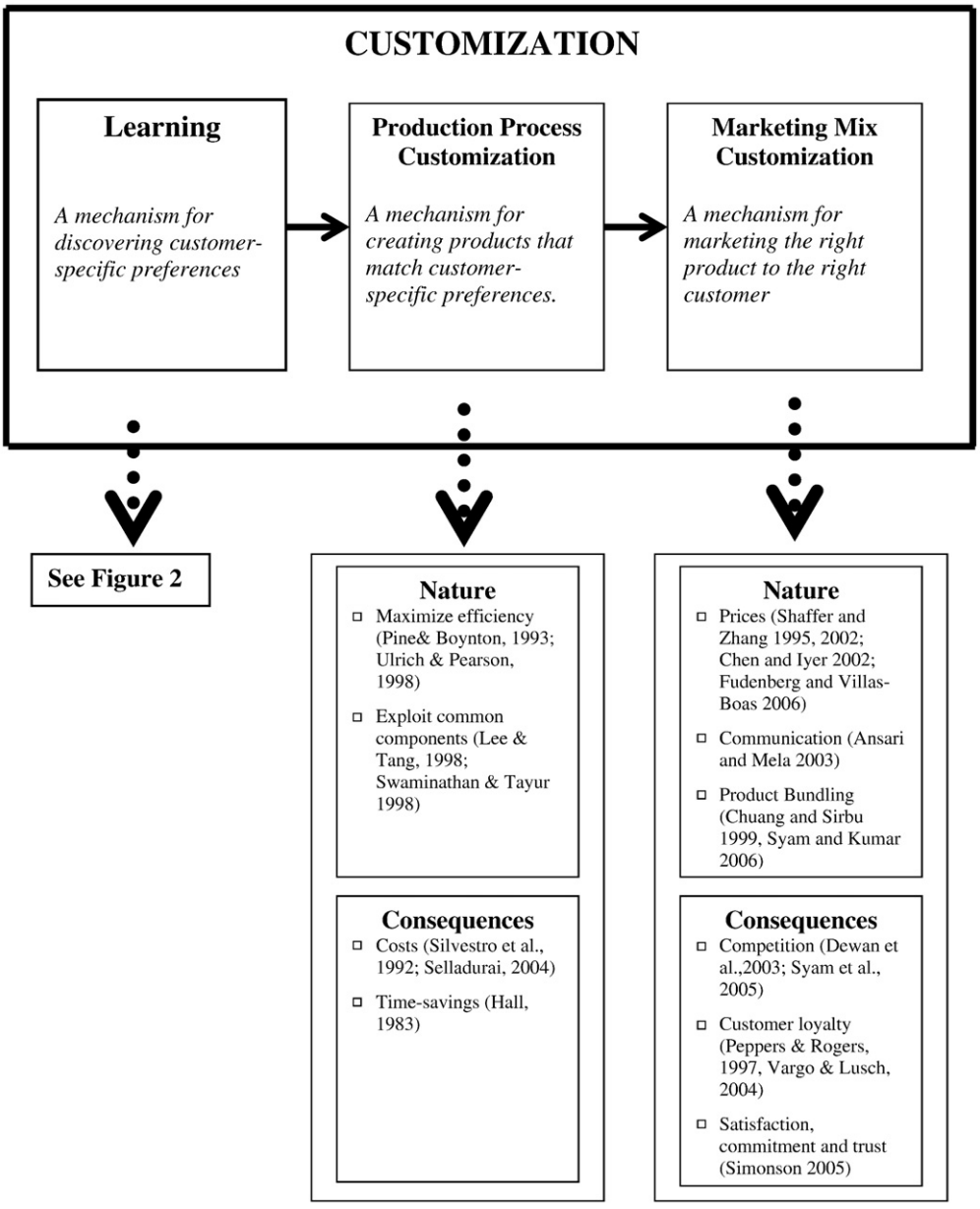

Fig. 1. Elements of the customization process and representative research.

Ritz-Carlton's anticipating a return guest's preferred snack (Court, 2005).[3]

Our principal thesis is that the two learning approaches, S-Learning and O-Learning, impact competition differently. This is because an O-Learning firm focuses on retaining its own customers rather than acquiring customers of competing firms. In contrast, an S-Learning firm can customize products for any customer, but it imposes costs on customers in obtaining customized products. In view of these differences, our objectives are to analyze:

1. The firms' incentives to invest in alternative learning approaches.
2. The strategic implication of a firm's learning approach choice on its rival.

In Section 2, we describe previous literature on alternative learning approaches in the customization process and provide anecdotal evidence suggesting the strategic consequences of these choices. In Section 3, we introduce our model under monopoly and competitive conditions. The monopoly model highlights how each learning approach affects the customer's decision-making process. The competitive model highlights the pricing equilibrium and the reaction decision, i.e., whether a firm should invest in O-Learning or S-Learning (or neither) given its rival's decision. In Section 4, we use a survey to examine firms' choices of learning approaches and to test whether these choices are consistent with our model. Section 5 concludes by summarizing our results, discussing managerial implications, and suggesting areas for future research.

2. Learning approaches in the customization process

Drawing extensively upon the framework introduced by Zipkin (2001), Fig. 1 identifies three elements of the customization process

[3] It should be noted that previous research does not explicitly distinguish between the two learning approaches and their competitive effects. For instance, Ansari and Mela (2003), p. 132, use examples of both *O-Learning*—a company customizing a website "based on revealed preferences data"—and *S-Learning*—allowing "users to self-customize the site"—to define on-site customization.