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Why Do Customers Get More Than They Need? How Organizational Culture Shapes Product Capability Decisions

The capability level of a product that a firm provides to a customer is an important marketing decision. In the extant literature, the normative heuristic for this decision is one of matching—of providing product capability levels that meet customer needs. However, industry evidence suggests that supplier firms routinely make product decisions that lead to "overshot" customers, whereby customers receive products with capabilities that exceed their requirements. The authors demonstrate how a supplier firm's organizational culture can cause overshooting scenarios and how these effects can be attenuated to the extent that the focal firm's basic values also reflect a customer orientation.

Keywords: organizational culture, customer orientation, competing values framework, product capability provision, product decisions

The extant literature on product management is based on two central premises. The first is that evaluations of a product's capability are ultimately made by customers (e.g., Parasuraman, Zeithaml, and Berry 1985). The second premise, which follows from the first, is that a supplier's decision to provide a particular level of product capability to customers must follow from the specific needs of the customers in question (e.g., Ghosh, Dutta, and Stremersch 2006). However, even casual industry observation reveals marketing practices that deviate from these premises.

The most obvious form of deviation is products that are capable of "too little." These products engender stark tales of product capability underprovision—the provision of products with capabilities that fall short of actual customer needs (Bayus, Jain, and Rao 1997). Underprovision is clearly a cardinal marketing sin and one that is unlikely to persist indefinitely because, provided alternatives exist and customers do not face significant information barriers (Kirmani and Rao 2000), customers will reject the product.

In addition, there is another form of deviation from what the marketing literature suggests is the appropriate approach to product management—namely, products that are capable of "too much." Reports of such products are becoming more numerous. For example, Rust, Thompson, and Hamilton (2006) point to the then-current BMW 745 with its more than 700 dashboard features. Other accounts of overprovision come from Christensen (1997), Christensen, Roth, and Anthony (2004), Christensen and Eyring (2011), and Thompson, Hamilton, and Rust (2005). These reports suggest widespread product capability overprovision—the provision of products with capabilities that exceed customers' needs.[1]

The current research focuses on the second form of deviation—product capability overprovision—and provides an explanation of why it arises. Christensen, Roth, and Anthony (2004) describe the outcome of overprovision as "overshot" customers—customers who consume a product but are not pleased, and even frustrated, with what it offers to them because the capabilities provided are in excess of their needs. For an overshot customer, the product seems overengineered, difficult to fully utilize, difficult to understand, or simply not ideal. Although the converse situation, underprovision, is clearly problematic from a marketing standpoint, overprovision is also problematic, and more research into its occurrence has been called for (e.g., Thompson, Hamilton, and Rust 2005).

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[1]Underprovision and overprovision are not limited to consumer markets. Gibson (2006a) discusses how suppliers regularly provide enterprise data center managers with computer storage products that fall short of the managers' needs. Conversely, Gibson (2006b) describes data center managers who routinely receive data storage devices loaded with unneeded capabilities.

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We suggest a possible, to date unexplored, explanation of how overprovision arises—one that is tied to the organizational culture of the supplier firm in question. Drawing on the widely used (e.g., Cameron and Quinn 2006; Deshpandé and Webster 1989) competing values framework (CVF) (Quinn and Rohrbaugh 1983) and its four CVF cultures—adhocracy, market, bureaucracy (also known as hierarchy), and clan—we propose that two types of organizational culture, in particular, have the potential to promote product overprovision: adhocracy and market.[2] As we explore in more detail in this article, the general commitment of adhocracy and market cultures to being, respectively, leading edge and supremely competitive has the potential to push a firm to endow products with higher levels of capability than many customers require.

However, we also argue that whether the overprovision potential of an adhocracy and market culture actually manifests itself in the form of overshot customers depends on whether restraints exist that prevent mismatches with customers' needs. We propose that such restraints reside in other aspects of a firm's culture, namely, in its customer orientation (Deshpandé, Farley, and Webster 1993; Kohli and Jaworski 1990; Narver and Slater 1990). If a firm's customer orientation is sufficiently strong, it may (1) attenuate the general tendency of adhocracy and market cultures to overprovide and (2) help ensure that these CVF cultures' relevant values are adapted so that capability levels are consistent with customer needs.

Thus, we expect the level of product capability that is ultimately offered to a customer to depend on the interactions between certain CVF cultures and the firm's customer orientation.[3] We develop a series of hypotheses regarding these interactions and test them empirically in the context of relationships between suppliers and customers in the information technology (IT) industry.

We seek to make three specific contributions to the literature. First, whereas previous research (e.g., Christensen 1997) has documented the phenomenon of overprovision and has described the difficulties overprovision causes for customers (e.g., Thompson, Hamilton, and Rust 2005), we show how certain aspects of a supplier firm may create such problems in the first place. In other words, we go beyond simply demonstrating the existence of overprovision per se to suggesting its unique antecedents.

Second, we show that CVF cultures possess distinct "dark sides," which have the potential to compromise customer outcomes. The relevant cultural influences are important for marketers to understand not only because of the effect they can have on customers but also because firms may promote their emergence in the first place. For example, if a firm strongly encourages and rewards the development of unique and original products, it may institutionalize adhocracy values, which can result in the systematic overprovision of product capability at the customer level.

Third, we add to our knowledge of customer orientation by showing that its particular values may play an even greater role within a firm than commonly assumed. Beyond helping a firm relate to its customers (e.g., Kohli and Jaworski 1990; Narver and Slater 1990), we demonstrate that a strong customer orientation also serves the important role of attenuating the effects of other values. This additional role suggests that investments in promoting a customer orientation may actually have greater payoffs than are frequently assumed. However, as we demonstrate subsequently, the corrective influence of a customer orientation manifests itself selectively—that is, only when paired with particular values. This, in turn, suggests that a customer orientation is associated with distinct boundary conditions.

The next section presents the theoretical background of the study and our hypotheses. Then, we describe our research method, including the development of a dyadic supplier–customer database and the empirical tests. The final section details the implications of our study and suggests further research topics.

Product Capability and Organizational Culture

Following Thompson, Hamilton, and Rust (2005, p. 432), we define "product capability" as "the consumer's beliefs about the product's ability to perform desired functions." Fundamentally, overprovision scenarios arise from product capabilities that are not properly calibrated to customer needs. By "overprovision of product capability," we refer to a situation in which customers perceive a product's capabilities to exceed their actual needs (Christensen, Roth, and Anthony 2004).[4]

Our general theoretical argument is that the level of a product's capability is affected by a supplier's organizational culture, or "the pattern of shared values and beliefs that help individuals understand organizational functioning and thus provide them with the norms for behavior in the organization" (Deshpandé and Webster 1989, p. 4). As we noted previously, these shared, or basic, values can take different forms, such as the four CFV cultures Quinn and Rohrbaugh (1983) specify: adhocracy, market, bureaucracy (or hierarchy), and clan.[5]

[2]Although the focus of this article is on product overprovision, we note that there are strong theoretical grounds for suggesting that bureaucracy and clan cultures may produce undershooting. We provide a tentative test of this possibility as part of our empirical study.

[3]Theoretically, as we discuss subsequently, we view customer orientation as part of a firm's overall culture, which coexists and interacts with the CVF cultures. Indeed, a common critique of the CVF framework by marketing scholars (e.g., Deshpandé, Farley, and Webster 1993) is that none of the values that underlie the four CVF cultures include the customer per se.

[4]Overprovision often involves a product with too many features relative to customer needs. It may also occur, however, with products that have a limited number of features. For example, high-end products such as QUAD hi-fi equipment (electrostatic loudspeakers, vacuum tube amplifiers, and preamplifiers) are extremely simple to use and have fewer features than many lower-end products; however, they overshoot the great majority of consumers' hi-fi needs. For these reasons, we rely on the term "capabilities" rather than "features." We thank a reviewer for drawing our attention to this distinction.

[5]Both the management (e.g., Cameron and Quinn 2006) and marketing (e.g., Moorman 1995) literature recognize that the four CVF cultures can coexist, not just at the firm level but also "in the same strategic business unit" (Deshpandé, Farley, and Webster 1993, p. 26).

Our specific argument, as outlined previously, is that two particular CVF cultures—namely, adhocracy and market—are associated with overprovision tendencies. Unlike bureaucracy and clan cultures, which share an internal focus on efficiency through integration, adhocracy and market cultures share an external focus on competitive positioning through differentiation (Cameron and Quinn 2006). As we discuss next, the basic values that underlie these two cultures' external focus influence a firm's marketing decisions in ways that overshoot customers' product-capability needs.[6]

Adhocracy culture. According to Cameron and Quinn (2006), an adhocracy culture's external focus on differentiation is underpinned by the basic need to be leading edge. Accordingly, providing groundbreaking products is emphasized, and a commitment to experimentation and pioneering is imperative. Providing unique and original products is a measure of success in its own right.

We expect an adhocracy culture to promote product capability levels that customers ultimately perceive to be higher than needed. Kotler (2000, p. 17) describes firms with a cultural emphasis on being leading edge as ones that are "caught up in a love affair with their products" and assume that customers "favor products that offer the most quality, performance, or innovative features." In effect, such products cater more to the interests of the products' innovators than to the needs of those who purchase them. As Tellis and Johnson (2007, p. 761) observe, such products are likely to be loaded with capabilities, some of which are "very useful, others trivial, others confusing." In turn, customers will be left feeling overshot.[7]

Furthermore, a cultural emphasis on being on the leading edge fosters a commitment to experimentation, encourages a potential for acting impulsively, and frequently directs a firm's focus to peripheral environmental patterns that other cultures ignore or cannot see (Mintzberg and McHugh 1985). These traits are a source of strength, but they can simultaneously prevent a firm from achieving customer focus in its product design and execution. One likely outcome of this lack of customer focus is a tendency to load products with capabilities that are rarely required. As a result, the customers of such firms are likely to conclude that they have been provided with excessive levels of product capability.

Overall, we propose that an adhocracy culture's need to be leading edge engenders a potential for product capability overprovision. We suggest the following hypothesis:

H_1: The stronger a supplier's adhocracy culture, the greater is the tendency to provide customers with more product capability than needed.

Market culture. According to Cameron and Quinn (2006), a market culture's external focus on differentiation is underpinned by a basic need for competitive superiority, which is expressed in a desire to aggressively outperform competitor products. A commitment to winning is imperative. It is noteworthy that such a cultural focus need not include the customer. Rather, primacy is given to beating competitive offerings for its own sake. Success is defined in competitive terms, such as relative market share and penetration.

We suggest that a market culture, like an adhocracy culture, will promote product overprovision. This tendency will be encouraged in a market culture because of its emphasis on competitive superiority. D'Aveni (1994) describes the product offerings of suppliers with such an emphasis as attacks on the competition whereby the products are meant to outshine industry standards categorically. Indeed, the capabilities that underlie the focal products' positions are designed to outperform competing offerings as a matter of principle. From a customer's standpoint, the likely consequences of such basic values are products with capabilities that can rarely be utilized fully and a general sense of having been overprovided for.

Porter (1985) also observes that suppliers with a strong emphasis on competitiveness and winning not only attack each other to gain a decisive competitive advantage but also readily counterattack to neutralize each other's advantage. This behavior involves mirroring competitor moves, including catching up with new competitive offerings. Such behaviors are likely to generate a stream of product improvements, but the refinements and enhancements in question need not match customer needs. Ultimately, the customers in question are likely to conclude that they are subject to overprovision.

Overall, we posit that a market culture's need to achieve competitive superiority engenders a potential for product capability overprovision. We suggest the following hypothesis:

H_2: The stronger a supplier's market culture, the greater is the tendency to provide customers with more product capability than needed.

The Moderating Role of Customer Orientation

As we explained previously, adhocracy and market cultures can be expected to have directional influences on a firm's product capability decisions in the form of overprovision. However, whether the potential that resides in these CVF cultures' values ultimately leads to overprovision depends on whether restraints exist within a given firm that keep the values from being deployed across a firm's customer base, without a consideration of differences in customer needs.

In this study, we concentrate on the restraints that reside in other parts of a firm's value system. Specifically, we consider the role of a customer orientation, defined as "a set of beliefs that put the customer's interests first" (Deshpandé, Farley, and Webster 1993, p. 27; see also Kohli and Jaworski 1990; Narver and Slater 1990). Because a customer orientation involves particular beliefs and values, marketing scholars (e.g., Homburg and Pflesser 2000;

[6]We note that overshooting describes situations in which a supplier's decisions have produced capabilities that exceed a customer's actual need. We acknowledge that apparent overshooting can happen when customers choose or upgrade a product on their own and, in the process, receive more capability than they require. This, however, is a different scenario from the one we study.

[7]For simplicity, we refer throughout the article to a given culture's "emphasis" or "need." We recognize that these terms describe the collective properties of the organizational participants in question.

Kennedy, Goolsby, and Arnould 2003) have argued that a customer orientation is a distinct form of organizational culture. In practice, this means that a customer orientation coexists with a firm's other basic values such as those that underlie the CVF cultures. We view a customer orientation, therefore, as "being a part of an overall, but much more fundamental, corporate culture"—as Deshpandé, Farley, and Webster (1993, p. 27) succinctly put it.

Drawing on this culture perspective in the marketing literature, we propose that a customer orientation plays a specific role with regard to adhocracy and market cultures, namely, to align the basic values that underlie these cultures with the needs of particular customers. We argue specifically that the values that underlie adhocracy and market cultures commit a firm to a general decision-making path and have a tendency to become objectives in their own right. A strong customer orientation will suppress this general tendency and provide supplier firms with a customer advocacy they would otherwise lack. This advocacy serves the important purpose of preventing a standard (or nondiscriminating) application of adhocracy and market cultures' values and, instead, aligning these CVF cultures' values with the specific needs of a customer. In the following sections, we consider the ways in which this takes place.

Consider first how a customer orientation influences the effect of an adhocracy culture. When a firm's customer orientation is weak, an adhocracy's general emphasis on being leading edge will be applied uniformly across the focal firm's customer base with little concern for whether the resulting levels of product capability match the needs of particular customers. Recall from the previous discussion of H_1 that an adhocracy culture in itself has a tendency to promote overprovision.

However, given a strong customer orientation, an adhocracy's emphasis on product leadership will be tied to the needs of particular customers. The emphasis on product leadership will be defined more broadly and in a way that includes meeting the needs of specific customers. Stated differently, a strong customer orientation motivates the relevant decision makers to show restraint in executing their general belief in the paramount importance of being leading edge. As a consequence, the overprovision tendency of an adhocracy becomes weaker as a firm's customer orientation strengthens. Thus:

H_3: The effect of an adhocracy culture on a supplier's tendency to provide customers with more product capability than needed is lower at higher levels of customer orientation than at lower levels of customer orientation.

Consider next the ability of a customer orientation to influence the tendencies of a market culture. If a firm's customer orientation is weak, a market culture's focus on beating the competition will serve as a general guide to its decisions, regardless of customers' actual needs. This will manifest itself in the form of systematic overprovision of product capability. As expressed in H_2, a market culture in itself tends to promote overprovision.

However, given a strong customer orientation, the criterion of competitive superiority will be tied to the needs of particular customers, rather than being pursued as a goal on its own. A strong belief in customer primacy will ensure that a market culture's general commitment to beating the competition and winning will be expressed in terms of how customers' needs are met relative to competitive offerings. Stated differently, a strong customer orientation creates a restraint on a market culture's tendency to trump competitors for its own sake. As a consequence, a market culture's general belief in competitive superiority is less likely to lead to overshooting. Therefore, we propose the following hypothesis:

H_4: The effect of a market culture on a supplier's tendency to provide customers with more product capability than needed is lower at higher levels of customer orientation than at lower levels of customer orientation.

Research Method

Research Design

We obtained data to test our hypotheses from both sides of a matched supplier–customer dyad in a business-to-business setting. We obtained data for the independent variables (i.e., the dimensions of culture) from the supplier side and data for the dependent variables (i.e. product capability) from the customer side of the dyad. This design minimizes the risk of common source bias and also ensures that the data are obtained from the most appropriate sources (e.g., the culture data from the focal supplier, the product capability data from the focal customer or capability recipient).[8]

On the supplier side, our unit of analysis was a particular strategic business unit. As noted in previous research (e.g., Cameron and Quinn 2006), our focal constructs (i.e., adhocracy culture, market culture, and customer orientation) may vary across strategic business units, necessitating an analysis at the business unit level to capture the focal phenomena.

Research Context

The empirical context for our study was the IT industry. Apart from being an industry in which overprovision occurs, this industry met two essential criteria for our study. First, we required a regulatory context that affords discretion to suppliers over product decisions, including capability decisions, beyond the need to comply with any industry standards. Second, our independent variables had to exhibit variation. Field interviews and reviews of trade publications confirmed that the chosen industry met these particular criteria.

Measurement Instruments

We measured the theoretical variables in our model with two questionnaires: one designed for suppliers and one for their customers. We developed both questionnaires following the procedures that Churchill (1979) and Anderson and Gerbing (1988) outline. Initially, in-depth interviews were

[8]Asking a supplier about the extent of overprovision could also be associated with social desirability biases. Moreover, a customer is unlikely to be informed about the key aspects of a supplier's culture.

conducted with managers and their customers from eight different suppliers to develop a better understanding of the measurement domain. Building on these qualitative data and a review of the relevant academic literatures, we developed preliminary questionnaire versions. When possible, we used existing measures, adapting them to the present study.

During an IT tradeshow, we pretested the supplier questionnaire with a sample of 14 managers from different supplier firms, and we pretested the customer questionnaire with two customers of each supplier. Several minor modifications were suggested and incorporated into the questionnaire. The Appendix shows the scales as well as their particular data source (supplier or customer) and response format.

To measure product capability provision, we adapted Thompson, Hamilton, and Rust's (2005) product capability scale (used in their Study 3). The five-item, seven-point scale assesses the discrepancy between the product capability levels provided by a firm and a customer's actual needs. The scale was anchored by "far less than we needed" and "far more than we needed," so that respondents could reflect comprehensively on how their product-capability needs were actually provided for. Effectively, respondents indicated whether their needs were met (a midpoint score of 4), overprovided for (scores greater than 4), or underprovided for (scores less than 4).

We operationalized customer orientation with five scale items. The customer orientation scale developed by Deshpandé, Farley, and Webster (1993) provided four of the scale items. We took the fifth scale item from Narver and Slater's (1990) scale to more fully assess the role of a customer orientation in a firm's overall strategy (as per Kohli and Jaworski's [1990] conceptualization of a customer orientation).

To measure adhocracy culture and market culture, we relied on Cameron and Quinn's (2006) instrument, an earlier version of which (see Cameron and Freeman 1991) was used in Deshpandé, Farley, and Webster's (1993) study. We also measured bureaucracy culture and clan culture with the same instrument to be able to account for the effects of the other two CVF cultures in Quinn and Rohrbaugh's (1983) conceptualization of organizational culture. Following Moorman (1995), we modified Cameron and Quinn's instrument by asking respondents to rate each culture description on a seven-point scale. This modification enabled us to eliminate dependencies among the culture descriptions and capture the potential coexistence of all four CVF culture types.

Apart from controlling for bureaucracy and clan cultures, we measured two additional covariates for inclusion in our empirical model. One covariate, supplier reputation, accounted for the possibility that a customer's product evaluation can be influenced by a supplier's reputation for offering certain capability levels. We measured this variable using Doney and Cannon's (1997) reputation scale. The second covariate, supplier product experience, controlled for the possibility that suppliers selling a particular product may, over time, become more familiar with their customers' actual needs and adjust their provision levels accordingly. We measured the variable as the log of the number of years a supplier had been selling the focal product.

Data Collection

Our sampling frame was a commercially available national database consisting of IT companies. We drew a random sample of 1024 IT firms from the sampling frame. Because of this study's focus on products, we only retained firms for further consideration that were suppliers of actual products such as software packages, IT hardware, or auxiliary IT equipment, rather than pure service providers. There were 317 such suppliers in the sample.

We followed the following data collection procedures. One supplier informant was identified in each IT company and contacted by phone. The informants were asked to identify one of their products that had been in the market for a minimum of 12 months. This request ensured that (1) details related to the study's variables could be recalled with little difficulty (see Sethi 2000) and (2) customers had sufficient time to ascertain the capability of the focal product. Furthermore, to avoid self-selection biases, the informants were required to (1) focus on the last product launched before the 12-month period (see Moorman and Miner 1997) and (2) identify their third-largest customer (in terms of dollar sales) for the focal product (see Anderson and Narus 1990). The selected product could be an off-the-shelf product or one that allowed for customization.

We identified 105 supplier informants willing to nominate a corresponding informant in a customer firm—a hit rate of 33%, which is consistent with other studies (e.g., Rindfleisch and Moorman 2001) that have relied on similar matched research designs. To test for nonresponse bias, we compared our 105 participating suppliers with the 212 firms in the initial sample of 317 that did not respond, using two demographic variables (number of employees and annual revenue). We found no significant mean differences between the two groups ($p \leq .05$), suggesting a low probability of nonresponse bias.

We administered the supplier and customer questionnaires in two steps. The customer questionnaire was administered first. The 105 nominated customer informants were contacted by telephone and invited to participate in our study. One hundred customer informants agreed to participate and completed the questionnaire. The supplier questionnaire was administered second. The 100 supplier firms for which a corresponding customer questionnaire had been filled out were contacted by telephone and the supplier informant asked to complete a supplier questionnaire. All 100 supplier informants completed the questionnaire.

We conducted a formal post hoc test of informant quality and required the survey participants to rate their knowledge about our questions on a seven-point scale. The average scores were 6.30 (SD = 1.05) and 6.33 (SD = .89) for the suppliers and customers, respectively, suggesting that our informants were well-qualified to describe the focal phenomena.

The distribution of our dependent variable in our sample was as follows: Of the 100 customer respondents, 7 indicated that their capability need had been met by the pur-

chase in question (as reflected in a score of 4 on the seven-point dependent variable scale); of the remaining 93 customer respondents, 78 indicated that they had been overprovided for, while 15 indicated that they had been underprovided for, as reflected in scores of greater or less than 4, respectively, on the dependent variable scale.

Measure Validation

We used item-to-total correlations to identify items that did not belong to a particular construct domain. We compared deleted items with the original definitions of the constructs, and we determined that their removal did not compromise the construct definitions.

We subjected the multi-item scales to confirmatory factor analysis to assess their psychometric properties. Following the procedure that Bagozzi and Heatherton (1994) suggest, we employed a partial disaggregation model to increase the ratio of sample size to number of parameters. Thus, the factor loadings shown in Table 1 are composites of the individual items.

We assessed the factor model using a combination of absolute and incremental fit indexes, which displayed acceptable levels of fit. The composite reliabilities for all variables exceeded .70, and all the factor loadings were large and significant ($t \geq 2$). We assessed discriminant validity by computing the highest shared variance between all pairs of constructs, which we found to be lower than the average variance extracted (AVE) for all constructs. All the AVEs exceeded the .50 level recommended by Fornell and Larcker (1981). Finally, a series of nested tests on the factor correlations provided additional evidence of discriminant validity between the constructs. Table 1 shows the confirmatory factor model for the key theoretical variables, and Table 2 shows the correlation matrix for the variable set.

Hypothesis Tests

We performed multicollinearity diagnostic tests for our independent variables. Following Belsley, Kuh, and Welsch (1980), we computed conditioning statistics for the full model, including interactions and control variables, with all

TABLE 1
Measurement Model

Standardized Loadings	Product Capability Provision	Adhocracy	Bureaucracy	Market	Clan	Customer Orientation
X1	.93 (11.70)	—	—	—	—	—
X2	.78 (8.87)	—	—	—	—	—
X3	.93 (11.58)	—	—	—	—	—
X4	—	.82 (8.57)	—	—	—	—
X5	—	.68 (6.83)	—	—	—	—
X6	—	.71 (7.26)	—	—	—	—
X7	—	—	.88 (9.72)	—	—	—
X8	—	—	.52 (5.11)	—	—	—
X9	—	—	.84 (9.10)	—	—	—
X10	—	—	—	.79 (10.31)	—	—
X11	—	—	—	.63 (4.59)	—	—
X12	—	—	—	.76 (11.49)	—	—
X13	—	—	—	—	.89 (8.14)	—
X14	—	—	—	—	.46 (7.58)	—
X15	—	—	—	—	.95 (7.05)	—
X16	—	—	—	—	—	.78 (8.21)
X17	—	—	—	—	—	.74 (6.22)
X18	—	—	—	—	—	.70 (7.89)
Composite reliability	.91	.78	.80	.78	.83	.78
AVE	.78	.55	.58	.54	.63	.54
Highest shared variance	2%	35%	32%	32%	41%	41%

Notes: Model fit: $\chi^2 = 209.32$, d.f. = 120, p-value = .00; root mean square error of approximation = .08; nonnormed fit index = .90; comparative fit index = .91; incremental fit index = .91; and standardized root mean square residual = .09.

TABLE 2
Correlation Matrix

Product capability provision	1.00							
Adhocracy	.08	1.00						
Bureaucracy	.08	.40	1.00					
Market	.05	.41	.65	1.00				
Clan	−.05	.47	.40	.34	1.00			
Customer orientation	.03	.43	.36	.32	.50	1.00		
Supplier reputation	.29	−.08	.17	.14	−.03	.14	1.00	
Supplier product experience	.06	−.09	.04	−.01	−.05	−.02	.11	1.00
M	5.29	5.42	4.58	4.95	5.87	6.10	5.30	.73
SD	.97	1.03	1.20	1.03	.89	.75	1.50	.25

Notes: $r > .21$ are significant at $p < .05$.

indexes remaining below the threshold of 30. In addition, all variance inflation factors remained below the threshold of 10 recommended by Chatterjee and Price (1991). These results indicate that multicollinearity should not be a concern in this study.

Our hypotheses involve the determinants of deviation (in the form of overprovision) from a particular customer's product need (DV > 4). We tested the hypotheses with a Tobit I model (Amemiya 1985) using the statistical software package R (The R Foundation for Statistical Computing). For control purposes, the model accounts for the other two CVF cultures (bureaucracy and clan) and their interactions with customer orientation, as well as a supplier's reputation and product experience. We split the sample at the midpoint of the dependent variable, and we subsequently modeled the extent of overprovision (E[DV|DV > 4]). We estimated the model using the full sample of 100 cases, with 78 cases being noncensored for overprovision. The independent variables were mean-centered.

Table 3 contains the results for the overprovision model. As the table shows, both adhocracy culture ($\beta = .22, p < .05$) and market culture ($\beta = .23, p < .05$) in themselves promote overprovision, consistent with H_1 and H_2.[9] However, a customer orientation only attenuates the overprovision tendency of an adhocracy culture ($\beta = -.25, p < .05$). Thus, H_3 is supported, and H_4 is not supported.

We undertook post hoc slope analyses for the significant interaction in the regression equation following Aiken and West's (1991) guidelines. Table 4 contains the results of the slope analysis for H_3. The results show that the relationship between adhocracy and capability provision is nonmonotonic over the range of customer orientation, with adhocracy promoting overprovision at –2 SDs ($\beta = .95, p < .01$), weakening in that tendency at –1 SD ($\beta = .61, p < .01$), and reducing overprovision tendencies at +2 SDs ($\beta = -.43, p < .05$). This suggests that a customer orientation can not only attenuate but actually reverse an adhocracy's overprovision tendency.

[9]Given the mean-centered data, this should be interpreted as the effect of adhocracy and market cultures at the mean level of the moderator variable (i.e., customer orientation).

TABLE 3
Tobit I Model for Overprovision

		β	Error	z
Supplier reputation		.38**	.10	3.83
Supplier product experience		–.68	.39	–1.73
Adhocracy (A)	H_1 (+)[a]	.22*	.10	2.22
Market (M)	H_2 (+)	.23*	.08	2.85
Bureaucracy (B)		–.04	.06	–.55
Clan (C)		.02	.14	.17
Customer orientation (CO)		–.00	.18	–.01
A × CO	H_3 (–)	–.25*	.13	–1.96
M × CO	H_4 (–)	–.15	.11	–1.42
B × CO		.05	.10	.58
C × CO		.01	.19	.03
Wald statistic		38.57*** (11 d.f.)		

*$p < .05$ (two-sided).
**$p < .001$ (two-sided).
[a]Expected direction of hypothesized relationship.
Notes: DV: product capability provision > 4.

TABLE 4
Slope of Adhocracy Culture Over the Range of Customer Orientation (CO)

	Adhocracy Culture
At –2 SD of CO	β = .95**
At –1 SD of CO	β = .61**
At mean of CO	β = .26
At +1 SD of CO	β = .09
At +2 SD of CO	β = –.43*

*$p < .05$ (two-sided).
**$p < .01$ (two-sided).

Analysis of Underprovision

As we noted previously, our data revealed a set of 15 cases in which the customer received capability levels that fell short of their needs. While underprovision is not the focus of the current study, we believe from a theoretical standpoint that it can also be explained by cultural variables. Specifically, we expect the two remaining CVF cultures, bureaucracy and clan, to be associated with underprovision tendencies. Both these cultures share an internal focus on organizational integration (Cameron and Quinn 2006) which sets them apart from the externally focused adhocracy and market cultures and their concerns with differentiation. In a bureaucracy culture, the internal focus on integration manifests itself in a dominant need for operational efficiency, while in a clan culture, it is expressed in terms of an overriding need for preservation of the status quo (Cameron and Quinn 2006). We predict that these values, in turn, tend to show up in products that fail to meet evolving customer expectations.[10]

At the same time, in line with our previous discussion, we expect that a customer orientation will attenuate the inherent underprovision tendency of bureaucracy and clan cultures. Specifically, given a customer orientation's strong customer advocacy, the respective bureaucracy and clan values of operational efficiency and preservation of the status quo will no longer be pursued without regard for customer needs. Rather, they will be applied selectively and in a way that does not compromise the needs of individual customers.

To test these expectations, we estimated a Tobit I model for underprovision (E[DV|DV < 4]). We estimated the model on the full sample (n = 100) and mirrored the overprovision model in Table 3, but with 15 cases noncensored for underprovision. We emphasize that this analysis and the results must be interpreted as preliminary, given the small number of underprovision cases. With this caution in mind, we found that both a bureaucracy culture ($\beta = -.22, p < .05$)

[10]Although Cameron and Quinn (2006) describe a clan culture as one that defines success partially in terms of sensitivity to (external) customers, we also emphasize that a clan culture's core values (e.g., loyalty, tradition) only involve (internal) organizational members. Customers do not belong to a clan culture's domain, which is inside the firm; thus, customers are not integral to a clan culture per se.

and a clan culture ($\beta = -.42, p < .05$) tend in their own right to promote underprovision. However, a customer orientation only moderates this tendency for a clan culture ($\beta = .47, p < .05$). The post hoc slope analysis for this moderation effect reveals that, over the range of a customer orientation, a clan culture promotes underprovision at –2 SDs ($\beta = -2.38, p < .01$), somewhat less so at –1 SD ($\beta = -1.48, p < .05$), and the effect turns insignificant at +1 SD and +2 SDs.

In combination with our overprovision results, the following pattern emerges from the underprovision analysis: Neither the overprovision tendency of a market culture nor the underprovision tendency of a bureaucracy culture was attenuated by a customer orientation. Theoretically, this pattern is notable, in that both cultures, while different in key respects, have also been described (e.g., by Cameron and Quinn 2006) as sharing the attributes of being stringent and controlling. In contrast, adhocracies and clans have been described as being inherently flexible and discretionary, which suggests that their effects can be modified. We return to these findings in the final section.

Robustness Checks

We conducted three sets of robustness checks. First, the measure used for our dependent variable prompted the informants to assess capability regardless of the price paid for the focal product. Theoretically, this measure reflects our expectation that customers can experience overprovision (or underprovision) regardless of the price paid. For example, a customer's judgment that a particular capability yields no marginal utility does not necessarily depend on price; it simply requires an evaluation of what has been provided relative to current needs. Nevertheless, to examine the possibility that customers make capability assessments relative to the price paid, we also required our respondents to provide a capability judgment with explicit reference to the price of the product. We reestimated our hypothesized relationships with this alternative dependent variable, but our substantive findings remained unchanged.

Second, we estimated our hypothesized relationships using different sets of covariates, including measures of the market and product characteristics. Our findings were robust across the different model specifications, and in the interest of parsimony, we only report the model with the reputation and experience covariates in Table 3.

Finally, to evaluate the robustness of the underprovision findings, given the small number of cases on which they are based, we estimated a series of underprovision models that successively eliminated the covariates and the nonfocal interactions. The results of these models (which are less constrained in terms of the relationship between the number of parameters estimated and the available sample size) are consistent with the findings reported previously, thus providing some confidence in the underprovision findings.

Discussion

In the following sections, we discuss the implications of our findings for marketing theory and practice. We also identify some limitations of the current study and suggest topics for further research.

Implications for Theory

Although the extant literature has reported the existence of overprovision in markets, it does not provide an explanation of why this phenomenon occurs. We focused on one particular explanation—one that involves the characteristics of the supplier firm itself, namely, its organizational culture. Against this backdrop, our effort to link cultural variables with customer-level outcomes makes several contributions to the extant literature on organizational culture, market orientation, and product management.

One contribution is to show that certain CVF cultures are associated with dark sides, in that their values perpetuate product-management practices at the expense of the customer. Specifically, our results point to the dark sides of adhocracy and market cultures in that both CVF cultures have the potential to engender systematic mismatches between a firm's decisions on product capability and customer needs. At a more general level, our findings add nuance to the existing body of knowledge about organizational culture. Organization theorists (e.g., Alvesson 2002) have argued that there is a historical bias in organizational culture research toward positive cultural outcomes. Our study provides a more balanced view by showing that certain CVF cultures, unless their influences are restrained, may have distinctly undesirable effects for a firm's customers.

Furthermore, our conceptual framework responds to implicit calls (e.g., Deshpandé, Farley, and Webster 1993) in the marketing literature for broadening existing models of organizational culture. Notably, none of the standard CVF cultures discussed in the management literature (e.g., Cameron and Quinn 2006) include the customer per se. We show that a customer orientation is a distinct form of culture that coexists with the four CVF cultures and contributes toward a firm's overall culture by adding values that relate specifically to customers. To this end, we complement Deshpandé, Farley, and Webster's (1993) initial work on understanding how organizational culture relates to customers.

Our study also shows that the role of a customer orientation in an organizational culture context is broader than might be inferred from the extant literature. Note that previous market orientation research (e.g., Kohli and Jaworski 1990; Narver and Slater 1990) has assumed that the principal role of a customer orientation is an external one—namely, to enable a firm to create superior customer value by understanding the customer. In contrast, we find that a customer orientation can also play a key internal role—namely, to attenuate the inherent tendency of an adhocracy culture in a firm to promote the overprovision of customers with product capability.

Theoretical implications also follow from our finding that a market culture's tendency is not attenuated by a customer orientation. From a customer perspective, this means that a customer orientation is associated with certain boundary conditions. Specifically, the market orientation literature (e.g., Kohli and Jaworski 1990; Narver and Slater

1990) purports that a customer orientation translates customer needs into matching organizational responses. While we embrace this general view, our results also show that a customer orientation has limitations in that it does not diminish a market culture's tendency to engender a mismatch between product capabilities and customer needs.

The finding that a customer orientation attenuates only an adhocracy's overprovision tendency highlights an important distinction between adhocracy and market cultures. Specifically, Cameron and Quinn (2006) note that although both adhocracy and market cultures share an external focus on differentiation, they differ to the extent that an adhocracy culture accepts flexibility and discretion, while a market culture is more stringent and controlling. This particular difference in cultural characteristics raises the possibility that the provision tendencies of more stringent and controlling cultures might be inherently more difficult to attenuate through any means, not just difficult to attenuate with a customer orientation. We should add here that our results for underprovision, discussed previously, corroborate this possibility. Note that a clan culture mirrors an adhocracy culture in its emphasis on flexibility and discretion, while a bureaucracy culture shares with a market culture a tendency to be stringent and controlling (Cameron and Quinn 2006). Moreover, similar to a market culture, a bureaucracy culture was not attenuated by a customer orientation.

Implications for Practice

Firms frequently seek to promote and sustain basic values because they can guide desirable organizational behaviors (e.g., Homburg and Pflesser 2000). For example, the basic values that characterize an adhocracy culture are central to creativity in the new product development process, and the basic values that underlie a market culture fundamentally support a competitive mind-set toward customer attraction and retention.

However, our results point to the potential risks of a singular focus on the basic values of these CVF cultures. For example, consider the implications of actively building an adhocracy culture with the goal of promoting experimentation and developing groundbreaking new products, and the implications of fostering a market culture with the goal of promoting a competitive mind-set and trumping competing products. Our findings suggest that such management efforts should not be pursued in isolation because adhocracy and market cultures have inherent tendencies to overshoot customer needs. Rather, efforts to build and leverage the virtues of adhocracy and market cultures must be accompanied by parallel endeavors to create restraints that align these cultures' values with the needs of individual customers.

Our empirical results suggest that a customer orientation can play such a restraining role. At the same time, they also point managers to the limitations of relying broadly on a customer orientation's restraining qualities. Specifically, managers should note that the restraining effect of a customer orientation manifests itself selectively, namely in an adhocracy culture only. Most likely, more targeted organizational mechanisms such as financial incentives and monitoring (Ouchi 1980) are required to counteract a market culture's more stringent and controlling characteristics.

Another practical implication of our study is the importance of proactive self-assessments of a firm's organizational culture, including (1) the presence of different CVF cultures and (2) the presence of a customer orientation, as well as their joint effects on product decisions and, ultimately, customer perceptions. Particular managerial attention should be given to the presence of a market culture, given the possibility that, as evidenced by our findings, its overprovision tendency may be more difficult to restrain.

Limitations and Further Research

We limited our inquiry to one particular marketing domain, namely, decisions about actual products. However, we believe that there are some advantages associated with restricting the scope of the study in such a way. In particular, we believe that demonstrating product–culture links in a domain in which the focal decisions usually involve fixed investments on the part of a supplier (Jackson 1985) represents a strong test of our theory. We suspect that variations in the provision of capability are even more likely in pure service domains, in which capability levels can be easily varied upward or downward by suppliers (Rao, Qu, and Ruekert 1999). Thus, we encourage an extension and replication of this study in a service context.

Moreover, our conceptual framework could be expanded to account for other explanations of a firm's product capability decisions. For example, the notion of value disciplines introduced by Treacy and Wiersema (1996) may offer incremental insights into the origins of overprovision. It is possible that firms that pursue the value discipline of product leaders by concentrating "on offering products that push performance boundaries" (Treacy and Wiersema 1996, p. 15) may inherently tend toward overprovision.

We also note that a customer orientation did not significantly affect a firm's product-capability decisions in its own right. On the face of it, this finding appears inconsistent with the market orientation literature. However, we note that a customer orientation did play the predicted alignment role in certain types of CVF cultures. We hope that further research can shed additional light on the specific role that a customer orientation plays with respect to a firm's product decisions, especially decisions on calibrating a product to particular capability levels.

Another particularly important avenue of inquiry would be longitudinal investigations of the relationship between capability provision and strategic positioning. Possibly, trade-offs may exist in that a CVF culture (e.g., market culture) may have undesirable consequences at the individual customer level (i.e., in the form of overshooting) but simultaneously support firm-level strategic objectives (e.g., developing a reputation for being a supplier of well-engineered products).

Finally, several open questions pertain to the relationship between product capability provision and customer outcomes more generally. Future studies can augment our current outcome measure by considering customer satisfaction and loyalty. For example, a worthwhile question is

whether overprovision and underprovision have asymmetric effects on customer satisfaction. Conceivably, a certain level of undershooting (i.e., giving a customer less than needed) may be associated with a greater dissatisfaction effect than a corresponding level of overshooting (i.e., giving a customer capabilities that are not needed but that also do not undermine the product's functionality). Evidence of this kind could suggest that certain CVF cultures, if not properly attenuated, are more consequential for firm performance than others.

Appendix

Product Capability Provision

(Three scale items based on Thompson, Hamilton, and Rust 2005 and two new scale items. Data source: customers.) Respondents answered the following questions using their current or actual experience with the focal product compared with the needs that prompted the purchase in the first place. We used a seven-point scale, anchored by "far less than we needed" and "far more than we needed." (We also required respondents to complete the same items taking into consideration the price they paid for the product.)

- •The number of product features provided was [...].
- •The functionality of the individual product features was [...].
- •The overall performance of the product was [...].
- •The supplier's ancillary service package was [...].
- •The purchase overall was [...].

Customer Orientation

(First four items adopted from Deshpandé, Farley, and Webster 1993 and fifth item adapted from Narver and Slater 1990. Data source: suppliers.) We used a seven-point scale, anchored by "completely inaccurate description" and "completely accurate description."

- •We are more customer-focused than our competitors.
- •We believe our business exists primarily to serve customers.
- •When an important decision is made, the customer's interests come first.
- •The customer's needs should always come first.
- •Our competitive advantage is based on our understanding of customer needs.

Adhocracy, Market, Bureaucracy, and Clan Cultures

(All scale items adapted from Cameron and Quinn 2006. Data source: suppliers.) Respondents rated the following culture descriptions in terms of how similar they are to their business unit. We used a seven-point scale, anchored by "completely inaccurate description" and "completely accurate description."

Adhocracy culture

- •My business unit is a very dynamic place. People are always willing to stick their necks out and try new things.
- •The leadership in this business unit exemplifies product development, innovation, and risk-taking.
- •The glue that holds my business unit together is a commitment to innovation and technological development. There is a strong emphasis on being cutting-edge.
- •My business unit emphasizes developing new products, features, and services. Trying new things and prospecting for opportunities are valued.

Market culture

- •My business unit is very results-oriented. A major concern is with getting the job done. People are very competitive and achievement-oriented.
- •The leadership in this business unit exemplifies a no-nonsense, aggressive, and results-oriented focus.
- •The glue that holds my business unit together is the emphasis on achievement and goal-accomplishment. (This item was deleted on the basis of item-to-total correlations.)
- •My business unit emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.

Bureaucracy culture

- •My business unit is a very formalized place. Established rules and procedures rigorously govern what people do here.
- •The leadership in this business unit exemplifies coordinating, organising, or smooth-running efficiency. (This item was deleted on the basis of item-to-total correlations.)
- •The glue that holds my business unit together is formal rules and policies. Maintaining a smooth running business is extremely important here.
- •My business unit emphasizes stability and efficiency. Smooth operations are very important.

Clan culture

- •My business unit is like an extended family. People share a lot of themselves.
- •The leadership in this business unit is about nurturing and relationship-building.
- •The glue that holds my business unit together is loyalty to each other.
- •Commitment to this firm runs extremely high.
- •My business unit emphasizes high consensus, openness, and participation.

Supplier Reputation

(Adopted from Doney and Cannon 1990. Data source: customers.) Respondents rated the supplier's reputation according to what they believed it to be at the time when the focal product was first purchased. We used a seven-point scale, anchored by "did not believe" and "strongly believed."

- •This supplier was known for superior products.

Supplier Product Experience

(New item. Data source: suppliers.) The number of months (log transformation) the supplier had been selling the focal product.

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