Developing Customer Service Innovations for Service Employees: The Effects of NSD Characteristics on Internal Innovation Magnitude

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Developing Customer Service Innovations for Service Employees: The Effects of NSD Characteristics on Internal Innovation Magnitude

Nita Umashankar¹, Raji Srinivasan², and Dustin Hindman³

Abstract
During product recovery, firms rely on their customer service agents to recover customers’ product failures and deliver superior customer service. However, customers who contact the firm about a product failure often are dissatisfied, which makes customer service agents’ jobs challenging. Therefore, firms continuously try to improve their internal customer service operations to increase benefits for customer service agents and, by extension, their customers. The authors hypothesize that the way firms design (agent codesign and design acceleration) and implement (agent enablement) an internal customer service innovation has direct and joint effects on the magnitude of benefits of the innovation to customer service agents, termed internal innovation magnitude. The authors test the conceptual model using data on 38 internal customer service innovations at a Fortune 500 high-technology firm. The findings extend the internal marketing literature by demonstrating that service employees represent a critical source of user-generated feedback. The findings also contribute to marketing practice by suggesting that accelerating the design process not only saves costs but also increases benefits for the internal users of the innovation.

Keywords
customer service, product recovery, service innovation, internal marketing, service employees

Introduction
During product recovery, firms rely on their customer service agents to successfully resolve customers’ product failures and deliver superior customer service (Bowen 1990).¹ Customer service agents are key determinants of customers’ perceptions of the service (Hartline and Ferrell 1996) and play a critical role in the recovery of customers’ product failures (Boshoff and Allen 2000; Maxham and Netemeyer 2003). However, customers who contact the firm about a product failure often are dissatisfied and irritated, which makes customer service agents’ jobs challenging.² Widespread evidence in the literature (Maslach and Jackson 1981; Singh 2000; Singh, Goolsby, and Rhoads 1994) links customer service agents to burnout due to their beliefs that they cannot satisfactorily address customer demands during product recovery (Cordes and Dougherty 1993). Thus, firms face challenges in addressing customer needs even as they attempt to prevent job dissatisfaction of customer service agents. To address this, firms attempt to improve their internal customer service operations to increase benefits for customer service agents and, by extension, their customers. This study examines the new service development (NSD) characteristics that influence internal innovation outcomes for customer service agents.

Despite the long-standing recognition of the importance of satisfying frontline employees to create successful service outcomes for customers (e.g., Bitner, Booms, and Mohr 1994; George 1990), limited empirical research in internal marketing has examined employee-level outcomes (for exceptions, see Ahmed, Rafiq, and Saad 2003; Wieseke et al. 2009). Understanding employee-level outcomes is especially critical in service contexts that entail elevated levels of job stress, including product recovery services (Cordes and Dougherty 1993). In addition, prior research on service innovation has categorized new service outcomes in regard to customers (de Brentani 1995; Johnson et al. 2000), market attractiveness (e.g., Berry et al. 2006; Cooper and De Brentani 1991), and organizational culture (e.g., Froehle et al. 2000; Thwaites 1992), overlooking the extent to which service innovations benefit service employees. Furthermore, prior research highlights the effects of NSD on design process effectiveness (e.g., Froehle et al. 2000; Johnson et al. 2000) and firm performance.

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As economies have shifted from manufactured goods-driven markets to service-driven markets (Johnson et al. 2000), scholarly interest in service innovation has surged (e.g., Edgett 1994; Fitzsimmons and Fitzsimmons 2000; Gallouj and Weinstein 1997). Prior research has examined service process innovation (Boone 2000), the design of the service delivery system (Johnson et al. 2000), and the positive impact of service delivery innovation on firm performance (Chen, Tsou, and Huang 2009). Furthermore, outcomes of innovation (e.g., Chandy and Tellis 1998) in general and of service innovation in particular (e.g., Berry et al. 2006; Chandy and Tellis 1998; Chiesa, Coughlan, and Voss 1996; Johnson et al. 2000; Storey and Easingwood 1993) have been examined on several dimensions. For example, Chandy and Tellis (1998) define “innovation radicalness” as a new product that incorporates a substantially different core technology and provides greater customer benefits than the previous product generation in the category. Berry et al. (2006) define “market-creating service innovations” along two dimensions: the degree of service separability and the type of benefit offered. Both frameworks (i.e., Berry et al. 2006; Chandy and Tellis 1998) define innovation outcomes, among other dimensions, in terms of the benefits generated by the innovation, the focus of this research.

By integrating research in internal marketing and service innovation, this study (1) focuses on internal process innovations, (2) defines the internal innovation outcome in terms of the benefits created for customer service agents, and (3) empirically tests direct and joint relationships between NSD characteristics and internal innovation magnitude. In particular, we develop hypotheses that relate two design characteristics (agent codesign and design acceleration) and one implementation characteristic (agent enablement) to internal innovation magnitude.

We employed a combination of methods for this research, including observing customer service agents, attending innovation design sessions, conducting roundtable discussions with senior managers, and interviewing project managers. First, to understand how internal customer service innovations modify the job routines of customer service agents, we observed four customer service agents in their work environment. Second, to understand how internal customer service innovations are designed, we attended four innovation design sessions. Third, integrating insights from the observations and design sessions, we conducted round-table discussions with nine senior managers to formally identify themes that influence the outcomes of internal customer service innovations. The themes identified from these discussions guided the formulation of the conceptual framework and hypotheses. Fourth, we empirically tested the hypotheses using survey data collected during individual interviews with 34 project managers responsible for overseeing 38 internal customer service innovations.

The rest of this article is structured as follows: in the next section, we identify key themes from the exploratory research. Next, we develop the hypotheses and conceptual model. In subsequent sections, we describe the empirical study and results. Finally, we discuss the theoretical and managerial contributions and present limitations and opportunities for further research.
Exploratory Research to Identify Key Themes

To identify themes pertaining to internal customer service innovation, we conducted exploratory research at the customer service operations of a Fortune 500 high-technology firm in three phases: observations of customer service agents, attendance at innovation design sessions, and round-table discussions with senior managers. High technology is a well-suited empirical context for this study because customers contact the firm about product failures (Larson 1989), causing customer service agents to experience stress and burnout (Singh 2000) and thus creating the need for internal innovation.

First, we observed four customer service agents in their work environment to understand the internal processes they use to deliver product recovery services. The observations, which lasted 13 hours over a 3-week period, entailed attending team meetings, observing customer service agents deliver customer service, and listening in on customer service calls. During one observation session, the firm implemented a new tool that was intended to help customer service agents access customers’ consolidated information using a single system. The agents underwent half a day of training to learn about the innovation. However, although management wanted the innovation implemented immediately, some customer service agents were reluctant to adopt it.

Second, to understand how internal innovations are designed, we attended four innovation design sessions in the firm’s head office in the United States and in its customer service offices in Panama City, Panama, and Bangalore, India. In two of the design sessions, customer service agents directly participated in the ideation stage of the design process. In the third design session, customer service agents provided feedback during the pilot testing stage of the design process. In the fourth design session, customer service agents did not participate in any stage of the design process. The design sessions revealed that for some internal customer service innovations, customer service agents played a critical role in their design.

Third, we conducted two round-table discussions with nine senior managers across different functions (e.g., Bendapudi and Leone 2002) to formally identify NSD factors that influence internal innovation outcomes (see Appendix A). The first round-table discussion with five senior managers lasted 1 hour and 30 minutes, and the second round-table discussion with four senior managers lasted 1 hour. To motivate the round-table discussions, senior managers considered a specific internal process change that altered the way customer service agents did their jobs. Topics for discussion then included key insights from the observations of customer service agents and the innovation design sessions. Specifically, the topics discussed involved how internal innovations are designed, what types of resources are invested in implementing the innovations, whether and how customer service agents are involved in customer service design, and how customer service agents perceive the innovations.

We taped the round-table discussions and had them transcribed. To extrapolate emerging themes, we qualitatively analyzed the discussion transcripts. We independently read through the transcripts, identified a list of possible themes, and coded the qualitative data. Specifically, we tracked the number of times senior managers mentioned a specific theme and then ranked the themes by frequency. We then compared their rankings and reached consensus on the emergent themes. One of the authors, who has 9 years’ experience in customer service management, created a list of final themes, removing themes that were mentioned less frequently. Each theme on the final list constituted a variable in the conceptual framework and hypotheses development. Figure 1 illustrates the research methods used in this study.

A key theme emerging from the round-table discussions was that customer service innovations differ in the degree to which they provide benefits to customer service agents, which in turn affects employee satisfaction and customer service quality. The “benefits” senior managers indicated included “allowing job responsibilities in a customer service agent’s formal job description to be accomplished more effectively and efficiently” and “allowing customer service agents to engage in discretionary behaviors that benefit the customer, the firm, and themselves.” One senior manager described an internal customer service innovation that provided significant benefits to customer service agents as follows:

Agents were now able to manage issues using an integrated tool, allowing them access to customer information including what customers purchased over their lifetime and complaint details. By improving the usability of the tool and providing instant access to customer information, the agents were more satisfied because their jobs became less stressful, ultimately increasing the quality of customer service.

Alternatively, another senior manager described an internal customer service innovation that offered limited benefits to customer service agents as follows:

We created an automated call transfer system. Before, the agents would have to figure out why a customer was calling and then type in the correct extension, and sometimes, mistakes would be made. All in all, this innovation was not central to their core competency and did not really add much to their service delivery.

The senior managers who participated in the round-table discussions viewed the innovation development process as consisting of a few key elements, including service design, organizational goals and timelines, and post-innovation resource allocation, all factors explored in this research. Service design is an important element of the overall NSD process, which includes “defining and refining an initial service concept” (Johnson et al. 2000, p. 10). According to the observations of the customer service agents, involving them in the design of internal innovations clearly improved the outcomes of the innovation. In support of this notion, a senior manager noted,
The agents helped us design a new way of handling phone calls by getting rid of the three different teams that used to handle a single issue. This was a paradigm shift—do everything in one’s power to satisfy the customer. The agents felt empowered. They no longer had to intercept a problem midway [through the call] and fix something they didn’t initially assess.

The speed at which internal customer service innovations are designed to meet internal demands emerged as another important theme in discussions with senior managers. Extant research (e.g., Griffin 1997; Nijssen, Arbouw, and Commandeur 1994; Ramaswami, Srivastava, and Bhargava 2009) highlights the importance of design acceleration, with a focus on its antecedents, to reduce costs, keep up with competition, and respond to shorter product life cycles. For example, a senior manager noted,

We created a tool for highly complex issues, those that involved irate customers. We needed a tool for the agents to log and track issues and resolve severe problems. We rushed the design stage in order to solve this problem quickly because customers and agents were unhappy. The outcome ended up being very powerful for the agents.

During the execution phase of the NSD process, the use of “enablers” during the implementation of service innovations becomes critical to their success with users (Johnson et al. 2000). Enablers (i.e., training, ongoing assistance, and tools) help service employees integrate innovations into their service delivery (Parasuraman 1998). Enabling customer service agents during the implementation of internal innovations emerged as a key theme from discussions with senior managers. As one senior manager noted,

We created an innovation that allowed agents to “take over” customers’ computers to resolve customers’ problems. This was empowering for the agents and it led to better resolution. We supported the agents by giving them ongoing training. We also allowed the agents to take more time per call to use this tool and constantly requested their feedback.

In summary, observations of customer service agents in their work environment revealed that internal innovations alter the way they do their jobs and that the benefits of internal customer service innovations vary. The innovation design sessions revealed that customer service agents play a key role in the design of some, but not all, internal customer service innovations. Finally, the round-table discussions with senior managers revealed that the NSD process, including design and implementation, influences the magnitude of benefits of internal innovations to customer service agents.
With respect to the development of internal customer service innovations, the following three themes emerged: agent codesign, design acceleration, and agent enablement. Agent codesign is the degree to which customer service agents are involved in the design of the internal customer service innovation (Jayasimha, Nargundkar, and Murugaiah 2007). Design acceleration is the extent to which the customer service design process is hastened as a result of changing internal requirements. Agent enablement is the degree to which customer service agents have resources to implement the internal customer service innovation. Agent codesign and design acceleration constitute design characteristics (Griffin 1997; Von Hippel 1978), and agent enablement is an implementation characteristic (Johnson et al. 2000; Parasuraman 1998).

With respect to the outcome of the innovation, internal innovation magnitude, or the magnitude of benefits of the innovation to customer service agents, also emerged from the round-table discussions. Prior work in the innovation area (e.g., Berry et al. 2006; Chandy and Tellis 1998) defines the outcome of innovation in terms of the benefits created by the innovation for customers. Extending this literature, we define the innovation outcome in terms of benefits created for service employees.

**Hypotheses and Conceptual Development**

Three key ideas underlie the hypotheses development. First, we propose that internal innovation magnitude is an outcome of the NSD process and is determined after its creation (not before). Second, the processes affecting internal innovation magnitude evolve sequentially, with implementation necessarily following service design. Third, NSD characteristics are determined at the level of the individual innovation and therefore vary across innovations within the firm (Sethi, Smith, and Park 2001). Figure 2 illustrates the conceptual model underlying the hypotheses. The main effects are hypothesized followed by their interaction effects.

**Agent Codesign**

A large body of work in the new product development literature has examined user-led innovation (e.g., Lilien et al. 2002; Von Hippel 1978). Involving users in new service design can generate novel ideas for new services (Lilien et al. 2002), provide a deeper understanding of user needs, and increase the likelihood that the innovations will meet those needs (Alam 2002). The service innovation literature provides some evidence of employee involvement in NSD. For example, Schneider and Bowen (1984) argue that by including service employees in the NSD process, customer needs can be better identified, successful implementation can be enhanced, and process efficiency can be improved. Jayasimha, Nargundkar, and Murugaiah (2007) report that customer-contact employees involved in product recovery are more likely to contribute to NSD because of firsthand knowledge of customers’ needs.

Because customer service agents are the users of internal customer service innovations, they have a superior understanding of delivery process specifications and performance outcomes, and thus their inputs are useful in innovation design. In addition, soliciting their inputs as an internal marketing tool...
is likely to enhance the outcome of the innovation by increasing their perceptions about the extent to which the firm values their contributions (Bell and Menguc 2002), creating positive word of mouth for the innovation. Thus:

1. **Hypothesis 1**: For an internal customer service innovation, increasing agent codesign has a positive effect on internal innovation magnitude.

**Design Acceleration**

A primary means for achieving competitive advantage in NSD is to accelerate the design process. In addition to lower development costs, rapid service development enables greater responsiveness to user needs (Ittner and Larcker 1997). In the product recovery context, customer service agents handle customers’ complaints and product failures and are also susceptible to burnout and job stress (Singh 2000). As such, internal marketing efforts to deliver benefits to customer service agents more rapidly suggest a higher level of attentiveness to their needs and are more likely to result in internal innovations with superior benefits. In contrast, when the design of an internal innovation is delayed, customer service agents’ needs may change, and the subsequent innovation may not benefit them. Given these arguments, we propose the following:

1. **Hypothesis 2**: For an internal customer service innovation, increasing design acceleration has a positive effect on internal innovation magnitude.

**Agent Enablement**

Organizational support for a new service, including employee training and resource provision, has gained attention as a key predictor of innovation success (e.g., Zeithaml, Parasuraman, and Berry 1988). For effective customer service, frontline employees must be empowered, as they require latitude over the service task to ensure effective recovery (Rafiq and Ahmed 2000). Such employee empowerment is an essential aspect of internal marketing (Berry and Parasuraman 1992). We propose that a related concept, agent enablement, functions as an internal marketing tool to increase internal innovation magnitude. Agent enablement differs from employee empowerment in that it refers to providing employees with resources (e.g., training, tools, time to integrate the innovation, and additional assistance) to cope with internal process changes whereas employee empowerment refers to giving employees autonomy to increase responsiveness to customers (Rafiq and Ahmed 2000).

In general, customer-contact employees are often underpaid and undertrained, resulting in high job dissatisfaction and turnover (Bitner, Booms, and Tetreault 1990). When internal customer service innovations are implemented, changes to customer service agents’ existing job routines may cause additional stress. Therefore, enabling these agents during innovation implementation with additional resources is likely to reduce their aversion to the internal change, increasing their adoption and effective usage of the internal innovation. Thus:

1. **Hypothesis 3**: For an internal customer service innovation, increasing agent enablement has a positive effect on internal innovation magnitude.

**Agent Codesign and Design Acceleration**

Internal marketing efforts to accelerate the design process suggest a higher level of attentiveness to the needs of customer service agents and are more likely to result in customer service innovations with superior benefits to customer service agents. Specifically, efforts to accelerate the design process often result in eliminating steps in the design cycle (Gupta and Wilemon 1990), making the input of expert sources especially critical. Integrating the input of customer service agents into an accelerated design process helps the firm address evolving internal and external requirements (Froehle et al. 2000). Moreover, customer service agents can provide market information on problems with current customer service practices, changing trends, and customers’ problems, all of which are useful when the design process is accelerated. Thus:

1. **Hypothesis 4**: For an internal customer service innovation, as agent codesign increases, the effect of design acceleration on the internal innovation magnitude becomes more positive.

**Agent Codesign and Agent Enablement**

As part of their internal marketing efforts, firms can increase the benefits of internal customer service innovations by involving customer service agents in new service design and enabling them with resources during innovation implementation. Increasing service employees’ involvement in service design leads to motivation and commitment to the adoption of innovations (Doyle and Wong 1998; Santos and Stuart 2003). For example, using exploratory interviews, Zeithaml, Parasuraman, and Berry (1988) find that when service employees and managers work toward a common goal, the extent to which the employees feel involved and committed increases, improving their performance. Increasing the involvement of customer service agents in service design not only leads to superior innovations but also generates greater buy-in (Noble and Mokwa 1999) during the implementation stage (Morgan, Kaleka, and Katsikeas 2004), strengthening the positive effect of agent enablement on internal innovation magnitude. Thus:

1. **Hypothesis 5**: For an internal customer service innovation, as agent codesign increases, the effect of agent enablement on internal innovation magnitude becomes more positive.

**Design Acceleration and Agent Enablement**

Internal marketing is a planned effort to align, motivate, and integrate employees toward the effective implementation of
new strategies (Rafiq and Ahmed 2000). As noted previously, design acceleration can be viewed as an internal marketing tool used to increase firms’ responsiveness to the needs of customer service agents. Accelerating the design process in an effort to deliver the benefits of an internal innovation faster signals an overall emphasis on customer service agents’ job productivity, which is likely to positively affect their perceptions of and openness to enablement resources. As a result, the benefits of the internal innovation to customer service agents are likely to increase. Thus:

1. **Hypothesis 6:** For an internal customer service innovation, as design acceleration increases, the effect of agent enablement on internal innovation magnitude becomes more positive.

**Empirical Study**

To test the hypothesized relationships, we gathered survey data during individual interviews with project managers responsible for overseeing the development of internal customer service innovations. To identify the project managers, we asked six senior managers who participated in the round-table discussions to provide a list of internal customer service innovations the firm developed in the past 10 years. A list of 38 internal customer service innovations was produced, detailing innovations developed between 1999 and 2007. All the internal innovations were created at the firm’s headquarters in the United States and implemented in the firm’s global network of call centers. Following that, the senior managers identified project managers who were responsible for overseeing the development of the 38 internal innovations, had direct contact with customer service agents, and had knowledge of innovation outcomes. This process resulted in a list of 34 project managers (four project managers oversaw two innovation efforts each).

Employing McCracken’s (1988) long interview method, we conducted individual face-to-face interviews with the 34 project managers at the sample firm’s headquarters. The interviews were intended to obtain descriptions of the internal customer service innovations and ratings of the research constructs. The interviews lasted between 30 and 45 minutes. Each interview began with an introduction of the research purpose, which included the following: “The focus of our research is to understand how internal process changes, or innovations, change the way customer service agents do their job.” “We are interested in whether and how these internal innovations provide benefits to customer service agents,” and “We are interested in understanding how the internal innovation that you managed was developed.” The project managers then described the internal customer service innovation they managed, including its function, how it was developed, and whether and how it created benefits for customer service agents.

Table 1 provides descriptions of the internal customer service innovations. For example, one project manager described an internal innovation that modified standardized procedures, granting greater autonomy to customer service agents (Table 1; Innovation 31). The innovation resulted in moderate benefits to customer service agents because, though increasing their autonomy was useful, there was greater uncertainty due to the additional responsibility it entailed. Another project manager described an internal customer service innovation that routed customer service issues to customer service agents according to the type of product failure and customer service agent expertise (Table 1; Innovation 34). The innovation provided only minor benefits to customer service agents because the rules used for routing the product failures were not effective. Reiterating the insights from the round-table discussions, the descriptions of the internal innovations provide evidence of the variability in benefits created for customer service agents.

Next, to gather data on the research constructs, the project managers completed a survey of agent codesign, design acceleration, agent enablement, and internal innovation magnitude (for survey measures, see Appendix B). We pretested the survey instrument with two managers (not part of the sample) before presenting it to the project managers. As a result of feedback from the pretest, we included a definition of “benefits” in the survey and reworded the scale for agent codesign from “accelerated” to “rushed.” We used the survey ratings from the 34 project managers on 38 internal customer service innovations to empirically test the hypotheses in a regression model.

**Measures**

**Dependent variable.** The dependent variable is internal innovation magnitude. We adapted this measure from Berry et al.’s (2006) and Chandy and Tellis’s (1998) scales of innovation outcomes. To assess internal innovation magnitude, the project managers first received a definition of benefits for customer service agents resulting from an internal customer service innovation. The benefits included (1) allowing customer service agents to accomplish their formal job responsibilities more effectively and efficiently and (2) allowing customer service agents to engage in discretionary behaviors that benefit the customer, the firm, and themselves. Then, using this two-part definition, the project managers provided a rating of how the internal innovation they managed created benefits for customer service agents ($1 = no improvement in agent benefits$ and $7 = substantial improvement in agent benefits$).

**Independent variables.** The independent variables are agent codesign, design acceleration, and agent enablement. Although prior work has examined user codesign (e.g., Lilien et al. 2002; Schneider and Bowen 1984; Von Hippel 1978), a measure of service employee involvement was unavailable. To assess agent codesign, the project managers rated the degree to which customer service agents were involved in the design process of the internal customer service innovation on a 7-point scale ($1 = no agent involvement$ and $7 = high degree of agent involvement$). Prior research (e.g., Griffin 1997; Ittner and Larcker 1997) has measured design process cycle time in terms of the number of months from the start of product development to the date of introduction. Design acceleration
Table 1. List of Customer Service Innovations

<table>
<thead>
<tr>
<th>Innovation Number</th>
<th>Year of Introduction</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1999</td>
<td>Technology change to call routing infrastructure in which severe issues were auto-recognized and sent to highly tenured agents. Customer service innovation mildly benefited the agents by preventing difficult issues from routing to less tenured agents.</td>
</tr>
<tr>
<td>2</td>
<td>1999</td>
<td>New process and policy introduced to improve dispatching. This provided mild benefits to agents.</td>
</tr>
<tr>
<td>3</td>
<td>1999</td>
<td>New call routing and call handling process in which recently released products were auto-recognized and sent to highly trained service employees. Service innovation highly benefited the employees by preventing new and difficult issues from routing to rookie employees and by providing service employees access to product engineering teams.</td>
</tr>
<tr>
<td>4</td>
<td>2000</td>
<td>New service offering introduced, allowing large organizations to upgrade their base service plan. Service clearly segmented customers and highly benefited agents.</td>
</tr>
<tr>
<td>5</td>
<td>2000</td>
<td>New knowledge tool that allowed agents Internet browser access to step-by-step trouble shooting instructions. Customer service innovation improved on existing knowledge management tools, thus providing moderate benefits.</td>
</tr>
<tr>
<td>6</td>
<td>2000</td>
<td>Upgraded tracking tools to improve customer service interactions. Tool provided mild benefits to agents.</td>
</tr>
<tr>
<td>7</td>
<td>2001</td>
<td>Upgraded case management to manage 100% of customer service interactions. Tool provided moderate to significant benefits to agents.</td>
</tr>
<tr>
<td>8</td>
<td>2002</td>
<td>New organization of highly technical agents organized and trained to manage dispatches. The customer service innovation moderately benefited agents.</td>
</tr>
<tr>
<td>9</td>
<td>2003</td>
<td>Pilot program for call profiling tool, introduced to catalog and analyze 100% of customer service interactions. Tool provided moderate benefits to agents.</td>
</tr>
<tr>
<td>10</td>
<td>2003</td>
<td>New tool introduced to consolidate and simplify the redirection of customers to the appropriate department. Tool provided mild benefits to agents.</td>
</tr>
<tr>
<td>11</td>
<td>2004</td>
<td>Agents were reorganized and grouped into large teams to focus on one of three categories (1) first time issues, (2) repeat issues, and (3) follow-up issues. Customer service innovation moderately benefited the agents by moving chronic issues to more tenured agents.</td>
</tr>
<tr>
<td>12</td>
<td>2004</td>
<td>New tool introduced to enable agents to track and manage highly complex customer service issues. Customer service innovation greatly improved the agents’ ability to complete complex issues that required coordination across multiple departments.</td>
</tr>
<tr>
<td>13</td>
<td>2004</td>
<td>New fee-based service offering introduced to consumers in need of atypical support. Service offering provided moderate benefits to agents.</td>
</tr>
<tr>
<td>14</td>
<td>2004</td>
<td>New outbound dialer technology and process implemented to increase outbound call efficiencies. Program provided moderate to significant benefits to agents.</td>
</tr>
<tr>
<td>15</td>
<td>2004</td>
<td>New contract structure and phone service policies introduced. Changes provided moderate benefits to agents.</td>
</tr>
<tr>
<td>16</td>
<td>2004</td>
<td>New dashboard that provided real-time view of customers’ purchase history, current orders, and complaint history, creating high benefits to agents.</td>
</tr>
<tr>
<td>17</td>
<td>2005</td>
<td>New tool introduced to automatically identify computer hardware issues and send alerts to customers and agents. Tool provided mild benefits to agents.</td>
</tr>
<tr>
<td>18</td>
<td>2005</td>
<td>New fee-based service offering introduced to institutional customers in need of atypical support. Service offering provided mild benefits to agents.</td>
</tr>
<tr>
<td>19</td>
<td>2005</td>
<td>New reporting tool that provided summarized and detail views of performance across a variety of metrics. Service reporting tool provided high benefits to agents.</td>
</tr>
<tr>
<td>20</td>
<td>2006</td>
<td>New knowledge tool introduced, enabling agents to author, edit, and manage solutions to customer service problems. Customer service innovation improved on existing knowledge management tools, thus providing moderate benefits.</td>
</tr>
<tr>
<td>21</td>
<td>2006</td>
<td>New process and tool introduced to focus on improving problem resolution rates. It allowed the agents to take ownership of the customer’s problem and resolve the issue in any way possible. New process highly benefited the agents.</td>
</tr>
<tr>
<td>22</td>
<td>2006</td>
<td>New procedural standards introduced to establish consistency in processing highly complex issues. Service standards mildly benefited agents.</td>
</tr>
<tr>
<td>23</td>
<td>2006</td>
<td>Process and policy changes introduced to clarify questions and concerns about ownership of difficult customer service issues. High benefits to agents.</td>
</tr>
<tr>
<td>24</td>
<td>2006</td>
<td>New organizational structure introduced to enable agents to refer customers for cross-sell and up-sell opportunities discovered during the customer service interaction. Program provided mild benefits to agents.</td>
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(continued)
addresses changes in the design timeline of an innovation. Thus, the project managers rated the degree to which the design of the innovation was rushed to meet changing internal goals (1 = no change to timeline and 7 = high degree of rushing). Building on prior work on enabling service employees (e.g., Johnson et al. 2000; Parasuraman 1998), we created a measure for agent enablement. The project managers received a description of enablement resources, including training, tools, additional time to integrate the innovation, and onsite assistance. They then rated the degree to which resources were provided to customer service agents during the implementation of the innovation (1 = limited resources and 7 = substantial resources).

Control variables. We included the control variables innovation complexity and time delay in the model. The project managers rated the complexity of the internal customer service innovation, or the number of functions the innovation delivered (Griffin 1997), on a 7-point scale (1 = simple innovation and 7 = complex innovation). To control for time delay, or the time lag between the implementation of the innovation and data collection, we subtracted the year of implementation from the year of data collection (range = .5 to 8 years). Table 2 provides a description of the measures.

## Results

The mean internal innovation magnitude of the customer service innovations is 3.9 on a 7-point scale with a standard deviation of 1.9. The mean agent codesign is 4.618 (SD = 1.690), the mean design acceleration is 4.368 (SD = 1.833), and the mean agent enablement is 4.855 (SD = 1.537). Table 3 contains the descriptive statistics and correlation matrix of the variables.

### Hypotheses Testing

We estimated a model with the main effects of agent codesign, design acceleration, and agent enablement; their interaction effects; and the control variables innovation complexity and time delay.
Table 2. Definition of Constructs

<table>
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<tr>
<th>Constructs</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Independent variables</td>
<td></td>
</tr>
<tr>
<td>Design characteristics</td>
<td></td>
</tr>
<tr>
<td>Agent codesign</td>
<td>The extent to which customer service agents are involved in the design of the internal customer service innovation.</td>
</tr>
<tr>
<td>Design acceleration</td>
<td>The extent to which the customer service design process is hastened as a result of changing internal requirements.</td>
</tr>
<tr>
<td>Implementation characteristic</td>
<td></td>
</tr>
<tr>
<td>Agent enablement</td>
<td>The extent to which customer service agents are provided resources to implement the internal customer service innovation.</td>
</tr>
<tr>
<td>Control variables</td>
<td></td>
</tr>
<tr>
<td>Innovation complexity</td>
<td>The number of functions delivered by the innovation.</td>
</tr>
<tr>
<td>Time delay</td>
<td>The time lag between innovation implementation and data collection.</td>
</tr>
<tr>
<td>Dependent variable</td>
<td></td>
</tr>
<tr>
<td>Internal innovation magnitude</td>
<td>The extent to which an internal customer service innovation offers superior benefits to customer service agents relative to the existing customer service process.</td>
</tr>
</tbody>
</table>

delay on internal innovation magnitude using the GLM procedure in SAS 9.1. Table 4 contains the results of the estimation. We mean centered the variables to reduce potential multicollinearity that may arise from the interaction terms (Aiken and West 1991). In line with Belsley, Kuh, and Welsch (1980), the variance inflation factor and condition numbers were lower than 10 (average = 1.466; maximum = 2.694), suggesting that multicollinearity is not a threat to the validity of the study’s findings.4 The data fit the model well ($F = 6.18, p < .01$).

The results indicate that neither innovation complexity ($b = .136$, nonsignificant [ns]) nor time delay ($b = .079, ns$) have an effect on internal innovation magnitude. The results support the positive main effects of agent codesign (Hypothesis 1: $b = .389, p < .01$) and design acceleration (Hypothesis 2: $b = .231, p < .05$) and marginally support the main effect of agent enablement (Hypothesis 3: $b = .268, p < .10$) on internal innovation magnitude. This suggests that increasing the involvement of customer service agents in new service design, accelerating the design process, and enabling customer service agents with implementation resources all increase the benefits of the internal customer service innovation for customer service agents.

The results support the positive interaction effect of agent codesign and design acceleration (Hypothesis 4: $b = .276, p < .01$) suggesting that involving customer service agents in the design process strengthens the positive effect of design acceleration on internal innovation magnitude. The results also support the positive interaction effect of agent codesign and agent enablement (Hypothesis 5: $b = .292, p < .01$), suggesting that increasing agent codesign strengthens the positive effect of agent enablement on internal innovation magnitude. Finally, the results do not support the interaction effect of design acceleration and agent enablement (Hypothesis 6: $b = -.064, ns$) on internal innovation magnitude.

Additional Analyses

Model comparisons. We compared the hypothesized model with a model with only the main effects of agent codesign, design acceleration, and agent enablement and the control variables of innovation complexity and time delay, excluding the hypothesized interaction effects. According to an overall $F$ test of the fit of the two models, the hypothesized model outperformed this model ($p < .01$). Thus, the proposed model with interaction effects explains internal innovation magnitude better than a model with only main and control variable effects.

Internal innovation magnitude and customer satisfaction. Internal customer service innovations that create benefits for customer service agents should increase customer satisfaction (Venkatesh and Kulkarni 2002). To examine this further, we contacted the project managers of the internal customer service innovations in the sample and asked them to rate the change in customer satisfaction resulting from the internal innovation using a 7-point scale ($1 = did not improve customer satisfaction$ and $7 = greatly improved customer satisfaction$). To test the relationship between the benefits created for customer service agents and customer satisfaction, we estimated a model that regressed customer satisfaction on internal innovation magnitude. The results indicate a positive effect of internal innovation magnitude on customer satisfaction ($b = .604, p < .01, F$ value $= 31.85, p < .01, R^2 = .476$). In addition, we conducted a test of mediation by regressing customer satisfaction on the hypothesized model, with and without internal innovation magnitude included as a predictor variable. Mediation occurs if the effects of the design and implementation characteristics on customer satisfaction decrease in the presence of the mediator, internal innovation magnitude. When internal innovation magnitude is added to the model, the effects of all the design and implementation characteristics significantly decrease (all Sobel test statistics are significant at the .05 level or better). Overall, these results suggest that increasing an internal customer service innovation’s agent codesign, design acceleration, and agent enablement increases internal innovation magnitude, which in turn enhances customer satisfaction.

The customer service agent perspective. To validate the findings of the empirical study, we investigated how customer service agents perceive the tested relationships. We randomly sampled 20 customer service agents from the firm’s headquarters and asked them to rate the degree ($1 = strongly disagree$ and $7 = strongly agree$) to which they agreed with statements about the findings from the study (see Appendix C). The average tenure of the customer service agents sampled was 7.9 years, seven agents were involved in the design of an
internal innovation during their tenure at the firm, and all agents had adopted at least one internal innovation. We compared the mean response of the agents with the midpoint (4 = neutral) of the rating scale. The results indicated that the agents agreed that the success of an internal innovation is determined by how it creates benefits for customers \((t = 8.49, p < .01)\) and for themselves \((t = 7.42, p < .01)\), and there was no difference in perceived value between the two groups \((t = –0.87, ns)\). With regard to agent codesign, the agents agreed that using their feedback in the design process provided greater benefits from the innovation to themselves \((t = 22.67, p < .01)\). With regard to design acceleration, they agreed that implementing innovations faster provided greater benefits to themselves \((t = 3.66, p < .01)\). Finally, with regard to agent enablement, they agreed that providing more resources during innovation implementation provided greater benefits from the innovation to themselves \((t = 27.76, p < .01)\). The results from the customer service agents validate the findings of this study.

### Discussion

The costs of service employee burnout in the product recovery context are high for the individual and firm alike (Singh, Goolsby, and Roads 1994), requiring firms to innovate in their internal operations to increase benefits for their service employees. Extending prior work on internal marketing and service innovation, this study examines the effects of design and implementation characteristics of internal customer service innovations on internal innovation magnitude. The findings show that increasing agent codesign, design acceleration, and agent enablement increases internal innovation magnitude. In addition, increasing agent codesign strengthens the positive effects of design acceleration and agent enablement on internal innovation magnitude. Testimonials from project managers interviewed at the sample firm support these findings (see Appendix D).

### Theoretical Contributions

**Internal marketing.** This study contributes to the research in internal marketing that examines employee-level outcomes (Ahmed, Rafiq, and Saad 2003; Wieseke et al. 2009). The study finds that internal customer service innovations are positioned as internal marketing tools that increase benefits to service employees. The findings show that involving customer service agents in service design not only strengthens the positive effect of design acceleration on internal innovation magnitude but also strengthens the positive effect of agent enablement. This finding extends the user-design literature (e.g., Lilien et al. 2002; Schneider and Bowen 1984; Von Hippel 1978) to suggest that innovation outcomes improve when firms integrate service employees’ feedback during the design process. The finding that agent enablement has a positive effect on internal innovation magnitude suggests that enabling customer

### Table 3. Descriptive Statistics \((n = 38)\)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Range of Variable</th>
<th>M (SD)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Internal innovation magnitude</td>
<td>1–7</td>
<td>3.986 (1.861)</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Agent co-design</td>
<td>1–7</td>
<td>4.618 (1.690)</td>
<td>.437***</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Design acceleration</td>
<td>1–7</td>
<td>4.368 (1.833)</td>
<td>.228</td>
<td>–.032</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Agent enablement</td>
<td>1–7</td>
<td>4.855 (1.537)</td>
<td>.279*</td>
<td>–.011</td>
<td>.005</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Innovation complexity</td>
<td>1–7</td>
<td>4.803 (1.784)</td>
<td>.104</td>
<td>0.158</td>
<td>–.184</td>
<td>–.129</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>6. Time delay</td>
<td>5–8</td>
<td>2.687 (2.527)</td>
<td>–0.006</td>
<td>–0.026</td>
<td>0.074</td>
<td>–0.152</td>
<td>0.238</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Note: *p < 0.1. **p < .05. ***p < .01.

### Table 4. Regression Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Hypotheses</th>
<th>Model Results</th>
<th>Hypotheses Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>–.779 (.645)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agent codesign</td>
<td>Hypothesis 1</td>
<td>.389 (.140)**</td>
<td>Supported</td>
</tr>
<tr>
<td>Design acceleration</td>
<td>Hypothesis 2</td>
<td>.231 (.118)**</td>
<td>Supported</td>
</tr>
<tr>
<td>Agent enablement</td>
<td>Hypothesis 3</td>
<td>.268 (.154)*</td>
<td>Marginally supported</td>
</tr>
<tr>
<td>Interactions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agent Codesign × Design Acceleration</td>
<td>Hypothesis 4</td>
<td>.276 (.086)**</td>
<td>Supported</td>
</tr>
<tr>
<td>Agent Codesign × Agent Enablement</td>
<td>Hypothesis 5</td>
<td>.292 (.092)**</td>
<td>Supported</td>
</tr>
<tr>
<td>Design Acceleration × Agent Enablement</td>
<td>Hypothesis 6</td>
<td>–.064 (.085)</td>
<td>Not supported</td>
</tr>
<tr>
<td>Controls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovation complexity</td>
<td></td>
<td>.136 (.135)</td>
<td></td>
</tr>
<tr>
<td>Time delay</td>
<td></td>
<td>.079 (.091)</td>
<td></td>
</tr>
</tbody>
</table>

Note: Parameter estimates (standard errors) appear in table. \(R^2 = .629; Adjusted R^2 = .539; F(7, 29) = 7.02.\) ***p < .01. **p < .05. *p < .10.
service agents with resources during the implementation of internal innovations increases the innovation’s benefits.

**Service innovation.** Prior research on service innovation has not examined the extent to which service innovations satisfy the needs of service employees. More specifically, NSD activities involving service employees and their effects on innovation outcomes have been overlooked. By examining the effects of design acceleration on internal innovation magnitude, we extend the new product development literature (e.g., Griffin 1997; Ittner and Larcker 1997), which has primarily focused on cycle-time reduction across innovation projects and not changes in the design timeline of a single innovation. The finding that design acceleration increases internal innovation magnitude suggests that hastening the design process signals a sense of responsiveness to the internal needs of service employees.

**Managerial Contributions**

In a context characterized by service employee burnout and stress (Singh 2000), the findings suggest that firms are likely to benefit from viewing customer service agents as internal customers and designing innovations to benefit them. For example, the sample high-technology firm designed and implemented an internal customer service innovation that dramatically improved customer service agents’ effectiveness and autonomy (Table 1; Innovation 16). The internal innovation allowed customer service agents to access integrated customer information, such as current product ownership, product failure information, and product recovery service flows. For the customer service agents, job-related stress was reduced by providing them with easier access and improved solutions.

The findings indicate that the method used to design an internal customer service innovation and the support resources used to implement it jointly determine the internal outcome of the innovation. Moreover, internal innovation magnitude is determined by processes executed both before and after the internal innovation is implemented. Managers are urged to assess internal innovation magnitude after both design and implementation have been executed, because prematurely assessing the value of an internal innovation at the time of introduction may lead to an undervaluation of the positive effects of implementation resources.

Involving customer service agents in the design process of internal innovations seems to benefit customer service agents, both independently and in conjunction with design acceleration and agent enablement. For example, at the sample firm, an internal innovation was developed that allowed customer service agents to recover customers’ product failures by any means necessary (Table 1; Innovation 21 and Appendix D, Example 4). The design process was accelerated because management received feedback about the immediate need for the innovation from the customer service agents involved in the design process. Management responsiveness coupled with integration of customer service agents’ feedback into the design process led to a superior innovation outcome. Similarly, integration of customer service agents’ feedback into the design of an internal innovation allowed agents to remotely access customers’ computers to fix their problems (Table 1; Innovation 27 and Appendix D, Example 5). Management also provided enablement resources in the form of agent training and feedback solicitation, increasing the magnitude of benefits resulting from the innovation.

The additional analysis indicates that internal innovation magnitude positively influences customer satisfaction. Thus, designing internal customer service innovations with customer service agents in mind also increases benefits to the firm’s customers, in support of the internal marketing view that effective internal exchanges are crucial for successful external exchanges.

**Limitations and Opportunities for Further Research**

This study focuses on internal customer service innovations at a single firm, as is typical in the study of innovations/innovation projects (e.g., Griffin 1997; Moenaert and Souder 1996). Such an approach allows us to control for any variability in firm characteristics that may affect the influence of customer service innovations on internal employees and the firm’s customers. To extend the findings from this study, further research could address issues related to the design of customer service innovations using a multi-firm and multi-industry approach to capture firm and industry differences.

To assess changes in customer satisfaction resulting from an internal customer service innovation, we used management ratings in this study. Unfortunately, we were unable to obtain customer satisfaction data from the firm’s customers that correspond to each of the innovations. Further research could use survey methods to track the effects of internal customer service innovations on customer satisfaction over time.

This study used single-item scales to measure the research constructs. Although the decision to use single-item scales, consistent with prior research (e.g., Bendapudi and Leone 2003; Bitner 1990; Garretson and Burton 2005; Okada 2005), was driven by a concern to reduce respondent fatigue, further research should consider using multi-item measures for the variables to investigate whether these provide stronger tests and validate the findings of this study.

We collected the survey ratings from a single source, project managers. However, common method bias is not likely to be a limitation because suspected biasing factors, including social desirability, do not have strong and consistent effects (Conway and Lance 2010). Nonetheless, to validate the findings, we surveyed customer service agents to gather their assessments of the study’s findings; the results were supported.

We studied the effects of development process characteristics on internal innovation magnitude. Additional themes that emerged from the round-table discussions and the relevant literature include characteristics of the customer service innovation, such as scalability, flexibility, and criticality to the firm’s business. Further research could investigate the effects of these innovation characteristics, in addition to the process characteristics studied herein, on internal innovation outcomes.
Appendix A
Round-Table Discussion Questions for Senior Managers

1. To begin, please think about a specific internal process change that altered the way that customer service agents did their jobs.
2. How was this innovation designed? Who was involved?
3. To what degree was the innovation designed with customer service agents in mind?
4. How do customer service innovations vary from one another?
5. In what ways do these internal process changes impact customer service agents?
6. Do the innovations benefit the customer service agents? If so, how?
7. Are the customer service agents open to the process changes? Do you face resistance?
8. How is the innovation supported after it is designed?

Appendix B
Survey Measures for Project Managers

Thank you for agreeing to complete this short survey. We would like to ask you a few questions about how the innovation you managed was developed and how it benefited customer service agents. Please circle a number on the scale that you most agree with.

Agent Co-Design

1. To what degree did you involve customer service agents in the design of the innovation?

<table>
<thead>
<tr>
<th>No Agent Involvement</th>
<th>High Degree of Agent Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

Design Acceleration

2. To what degree did your development team need to rush the design process to meet internal goals?

<table>
<thead>
<tr>
<th>No Change to Rushing</th>
<th>High Degree of Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
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<td>5</td>
<td>6</td>
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<tr>
<td>7</td>
<td></td>
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</tbody>
</table>

Agent Enablement

3. To what degree were resources provided to the agents to implement the innovation? Resources include, for example, training, tools, additional time to integrate the innovation, and onsite assistance.

<table>
<thead>
<tr>
<th>Limited Resources Provided</th>
<th>Substantial Resources Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
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<tr>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

Innovation Complexity

4. How complex was the innovation at the time of implementation?

<table>
<thead>
<tr>
<th>Simple Innovation</th>
<th>Complex Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

In addition, we are interested in how the innovation you managed benefited customer service agents. Benefits include (1) allowing customer service agents to accomplish their formal job responsibilities more effectively and efficiently and (2) allowing customer service agents to engage in discretionary behaviors that benefit the customer, the firm, and themselves.

Internal Innovation Magnitude

5. To what degree did the innovation improve benefits for the agents?

<table>
<thead>
<tr>
<th>No Improvement in Agent Benefits</th>
<th>Substantial Improvement in Agent Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

Appendix C
Questionnaire for Customer Service Agents

Thank you for agreeing to complete this short survey. We would like to ask you a few questions about your firm’s initiatives to make internal changes to improve its customer service operations.

Please circle your answer to the following questions:

1. Have you experienced an internal process change that affected the way you do your job?
   - Y  N

2. When the firm implements a new customer service process change, do you consider yourself a user of the new process?
   - Y  N

Please rate the degree to which you agree with the following statements.

3. Internal process changes can deliver benefits to you, the agent.
   - Strongly Disagree  Strongly Agree
   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

4. The success of an internal process change is determined by how it creates value for end consumers.
   - Strongly Disagree  Strongly Agree
   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
5. The success of an internal process change is determined by how it creates value for you, the agent.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

6. Implementing the process change faster provides greater benefits to you and other agents.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

7. Integrating agents’ feedback and ideas in the design of these internal process changes provides greater benefits to you and other agents.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

8. Providing agents with resources to integrate the internal process changes and use them properly provides benefits to you and other agents.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

---

**Appendix D**

**Examples of Quotes from Interviews with Project Managers**

1. **High Agent Co-Design and High Internal Innovation Magnitude**

“The agents needed a tool that allowed them to transfer complex problems and very upset customers to a senior person. The agents helped us design the innovation because they were aware of customers’ problems and what is possible from a service delivery perspective. This resulted in dramatic improvements which benefitted the agents.”

2. **High Design Acceleration and High Internal Innovation Magnitude**

“We developed an information technology tool for highly complex issues with irate customers. The agents needed a tool to log these complex issues, track them, and make sure that the problem got resolved. We rushed the design of the tool because customers and agents were very unhappy with the previous system. This tool was very powerful for the agents.”

3. **Low Agent Enablement and Low Internal Innovation Magnitude**

“We developed an innovation that integrated cross-selling into service delivery. We did not give the agents enough training on how to sell. Also, they were told to reduce handle time per call yet they were required to fix problems and sell. The agents were frustrated because they were told to cross-sell without being given the incentives or support to do so.”

---

4. **High Agent Co-Design and Design Acceleration and High Internal Innovation Magnitude**

“With this innovation, when a call comes in, the agent takes ownership of the issue, no transferring. This completely changed the way agents did their job. We rushed the design stage because we were getting positive feedback from the agents during the design process. By involving agents in design, we were able to speed up development. The agents felt empowered.”

5. **High Agent Co-Design and Agent Enablement and High Internal Innovation Magnitude**

“This innovation granted agents control of customers’ computers to fix their problems. The agents helped design innovation, which allowed them to build it to their specifications. We enabled them by giving them an extensive training course. Implementation went well because we got buy-in because agents were involved in the design process.”

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**Notes**

1. Although we acknowledge that there are many types of customer service, we focus on the provision of product recovery services and use product recovery and customer service interchangeably.


3. Interview with author on May 7, 2010.

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