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An Analysis Approach of User Centered Innovation for Call Center Services in Telecommunication

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Abstract

The growing global market of telecommunication services continuously promotes expanding customer needs and customer cares. Despite the efforts to facilitate Web-based services for customer contacts, Call Center Services (CC) with Interactive Voice Response Systems (IVR) currently remain the primary channel for customer services in telecommunication industries. In reality, the development of the system structure for IVR and the subsequent Call Center Information System are mainly based on the perspectives from the internal function processes on the provider side, i.e., a rather technical- or business- function oriented approach. User centered approaches of system innovation are therefore needed for better user experiences for such customer services.

This study aims to establish a template analysis framework for the system improvement towards user-centered customer services, through conducting an empirical study in a major telecom company in Taiwan. Sampled system records in IVR logs are extracted and further linked with the corresponding transaction records which are routinely reported by customer service representatives for call handlings. In addition, individual interviews with customer service agents are also the other primary part of this system analysis. The interview results show that the problematic repair service dispatch policy and the personnel proficiency in business inquiries are critical to the quality of customer services. By further cross-referencing the results of system analysis and agent interviews, practical suggestions for system innovation towards a user-centered customer service system as well as the implications for theoretical research are in further discussion.

Keywords: user centered innovation, customer service; call center; telecommunication

1. Introduction and Background

1.1 Call Centers for Customer Services

The growing global market of telecommunication services continuously promotes expanding customer needs and customer cares. Despite the efforts to facilitate Web-based services for customer contacts (e.g.,

Krawczya-Sokolowska et al., 2013; Kurniali, 2015), Call Center Services (CC) with Interactive Voice Response Systems (IVR) currently remain the primary channel for customer services in telecommunication industries. In reality, the development of the system structure for IVR and the subsequent Call Center Information System are mainly based on the perspectives from the internal function processes on the provider side, i.e., a rather technical- or business- function oriented approach.

Baraka et al. (2013) applied the Delone and McLean Information System Success Model (Delone & McLean, 1992; 2003) to evaluate the performance of call centers. Their analysis suggested that user satisfaction significantly correlate with net benefits. A study on call centers by Yaslioglu et al. (2013) further revealed that innovations on services and processes play critical roles on creating customer values. For most of the customer users who do not familiar with the technical or internal processes in telecommunication services, however, may have greater chances of wasting times or making errors while interacting with these service systems which are not designed from their perspectives (Chen, 2010).

1.2 User Centered Innovation for Customer Services

From the ergonomics viewpoint, both customer performance and the consequent customer experience are directly influenced by the usability of the system interfaces for customer services (Konradt et al., 1999; Drury & Chen, 2000; Chen, 2006). Therefore, user centered innovations are needed for better user experiences for such customer service systems.

Chen & Liao (2011) have proposed a framework specifically for the analysis and evaluation of system usability for electronic service quality. This framework defines system usability and user oriented services through the mappings of the information characteristics in customer interfaces to service quality attributes. For information-based service systems like call centers of telecommunication companies, system usability with service quality emphasis may be much meaningful in business innovations from the management perspective.

1.3 Customer Contact Model of Call Centers

Based on literature review and preliminary surveys on relevant modern practices, a customer contact model of typical call centers for telecommunication business in Taiwan is therefore proposed. Figure 1 illustrates the proposed customer contact model of call centers.

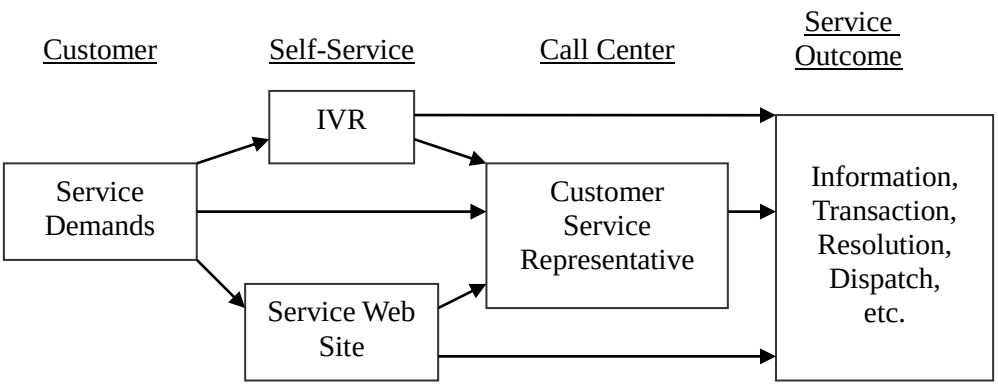

Figure 1. A customer contact model of telecommunication call centers

As shown in Figure 1, two intermittent service channels, i.e. IVR and service websites, are often deployed before customers talking with service representatives in a call center. The roles of these two intermittent service channels are two-folded. It is their primary function to act as filters to screen out those customers' needs can be self-serviced. The other role of these service channels is to collect as much information regarding customers' identities and service needs as possible in order to facilitate the subsequent service interactions with service representatives in the call center. Therefore, it is critical to design IVR systems or service websites with user-oriented emphasis for quality call center services.

2. Methods

This study aims to establish a template analysis framework for system innovation towards user-centered customer services. Based on the customer contact model depicted in Figure 1, an analysis framework for user-centered services in call centers are thus proposed, as shown in Figure 2. System analysis, log analysis, and interviews should be conducted for company-wide organization, IVR systems, and call center personnel. Three sets of data, i.e., present service functions, customer expectations and behaviors, and internal support needs, should be collected and cross-referenced in this framework.

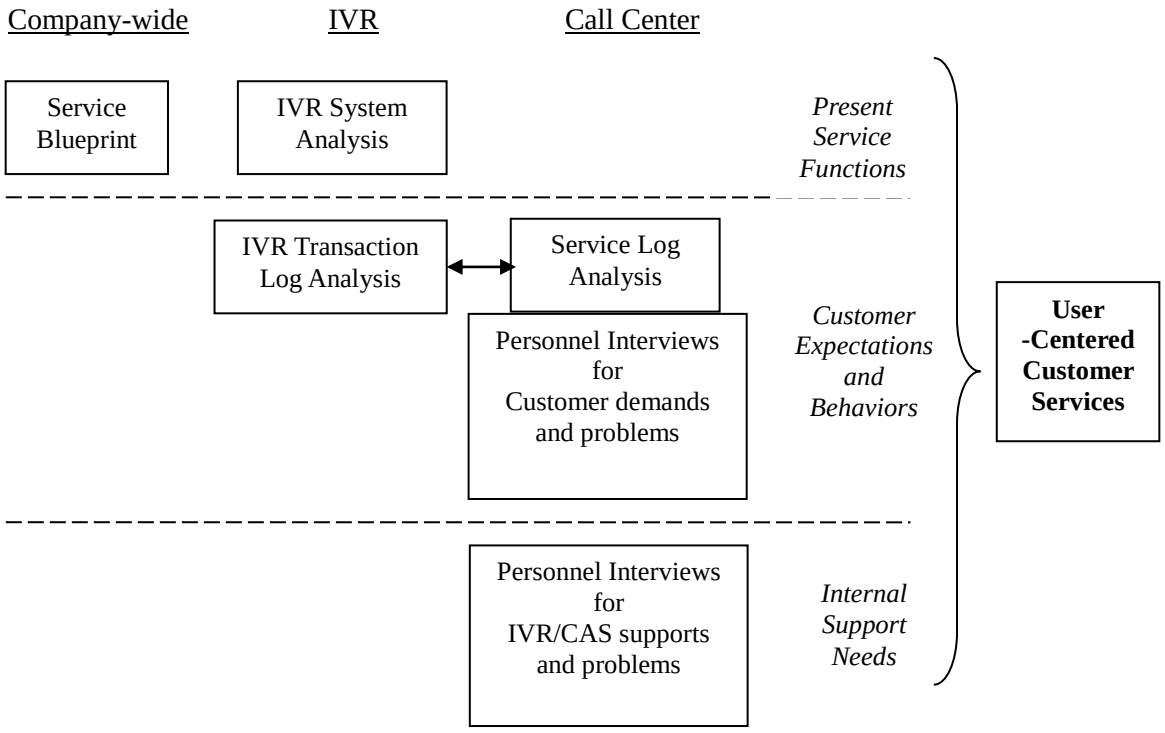

Figure 2. The analysis framework proposed for user-centered services in call centers

An empirical study with this proposing analysis framework was conducted to a major telecommunication company in Taiwan for verification. Sampled system records in IVR logs with sets of 500 are extracted and further linked with the corresponding transaction records which are routinely reported by customer

service representatives for call handlings. In addition, individual interviews with 30 customer service agents are also the other primary part of the system analysis.

3. Results and Discussion

In general, this proposing analysis framework has been successfully instrumented and applied to the call center of the target telecommunication company in Taiwan. Empirical data and suggestions for system innovations with a user-centered emphasis are also resulted through this analysis temptation.

3.1 IVR transaction analysis

Sampled system records in IVR logs with sets of 500 were extracted and further linked with the corresponding transaction records which are routinely reported by customer service representatives for call handlings. As shown in Figure 3, the analysis to IVR transaction logs depicts an obvious tendency of IVR system bypassing. That is, instead of navigating through the IVR menu structure to map their service needs, most customers chose to select the option of "talking to a service representative directly" and leave the system at premature stages. This tendency reveals the problem of under-utilization in IVR systems.

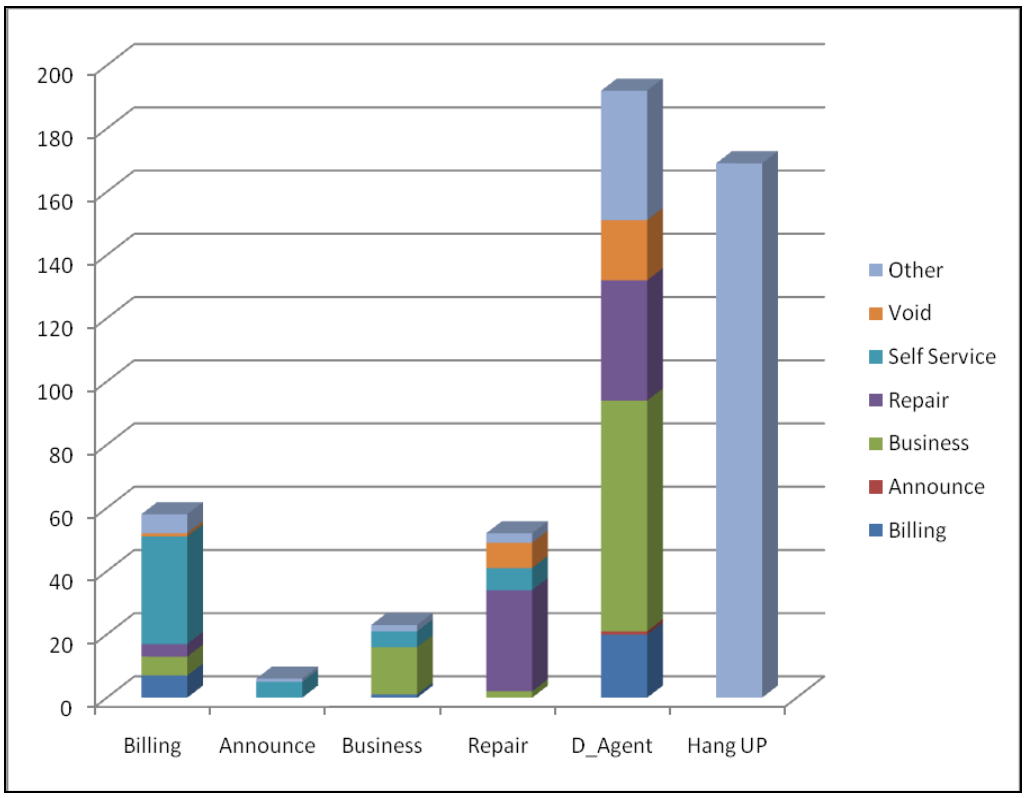

Figure 3. The categorical results of IVR transaction logs analysis

3.2 Personnel Interviews

Besides the analysis of the objective data from IVR transaction logs, individual interviews were also conducted with a total of 30 customer service representatives sampled from the call center of this target

telecommunication company. Figure 4 shows the categorical results of major service needs or reasons for repetitive calls for customers from the interview analysis.

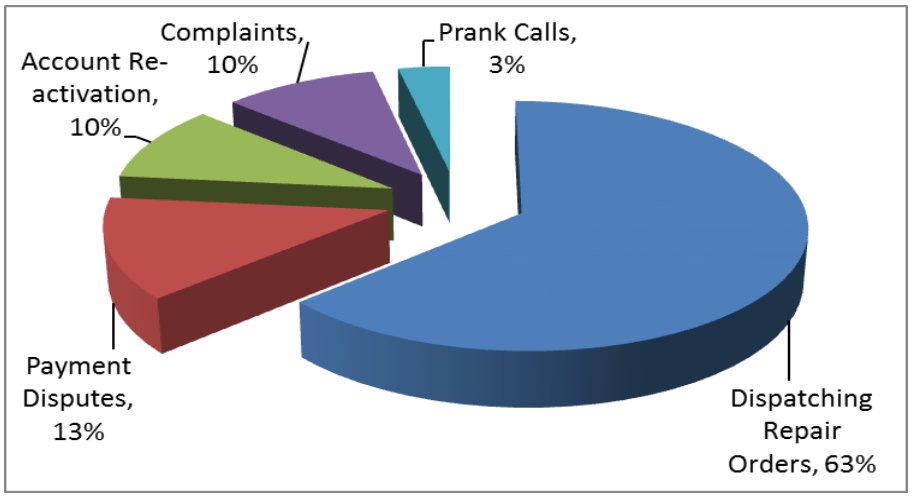

Figure 4. The service needs/reasons for repetitive calls from customers

The agent interview results reveal that the problematic policies in repair service dispatching (as shown in Figure 4) and the personnel proficiency in business inquiries (not shown) are critical to the quality of customer services. The correctness and timeliness of personnel responses during customer interactions in call services were frequently reported as a major issue in personnel proficiency. The knowledge of feasible service options and potential benefits and costs to facilitate customer service decision was also critical in personnel proficiency.

3.3 Cross-analysis of system and personnel data

By further cross-referencing the results of system analysis and agent interviews, the primary implications for system innovations in call center services are briefly noted as follows:

- For the design of IVR systems, the step-by-step entry-confirmation interface protocol may need to change into rather multiple-entry with listed responses, in order to avoid repetitive entry-response interactions as well system overload. In addition, prolong announcements/statements by the system during customer operations should be rephrased for better clarity and conciseness.
- For the design of CAS systems, which are the computer systems used by service representatives while they are interacting with customers, the response speed and correctness are comparatively critical to customer interactions and services. The configuration of the rich information displayed in the computer screen should be redesigned for better usability, especially for the fitness to service procedures.

4. Conclusions

In this study, we propose a customer contact model as well as an analysis framework for user centered system innovation to quality call center services. This proposing analysis framework emphasizes on the

analysis and cross-references through present service functions, customer expectations and behaviors, and internal support needs. For verification, this framework has been successfully instrumented and applied to the call center of a major telecommunication company in Taiwan.

Our analysis to the case study of framework varication also reveals: 1) the significantly common tendency of customer strategy to bypass IVR for talking to the real person directly; 2) customer anxiety on repair dispatching over other service needs due to the appointment policies of process management; 3) the importance of personnel proficiency especially in the correctness and timeliness of call services as well the knowledge of feasible service options and potential benefits and costs; 4) the needs for simplification in user interface design of IVR; 5) the needs for procedural friendly re-design to the CAS interfaces. Empirical results and implications, such as the tendency of under-utilization in IVR, the problematic policies in repair service dispatching, the importance of personnel proficiency, and the interface design issues for IVR and CAS, are valuable venues both for system innovations and future research.

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