The Development of Web Questionnaire with Business Process Modeling for Service Evaluation

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Abstract

In the servicizing economy, enterprises are required to have an improving cycle system including the customer side as well. But service evaluation that are not connected process is not interpreted to the structure of service evaluation and process. Therefore, we propose the integrated method of business process modeling and web questionnaire. In this here, we constructed two models for describing the differentiation of the service processes. The characteristics of first service process is a fixed process by definition. The other has a hybrid service process. By this method, we can have an improve cycle system including the evaluation from customer side.

Keywords: Service evaluation, Business process modeling, Web questionnaire

1 Introduction

1.1 Background

Every enterprises need to have an improving cycle system, e.g., PDCA(Plan/Do/Check/Answer) cycle in order to modify their business quality continuously. In the servicizing economy, every enterprises need to consider the service management as well. But the service process is very complex and not fixed. We need to record the change how to provide their service to the customers.

In addition, criteria of service evaluation have a variety by each person. For example, the evaluation criteria are different for the high maturity customer or not. And it is different from the situation and objective of customers. Therefore, service provider need to observe the evaluation from customers.

In this reason, we require the dynamic analysis in relation to both service provider and customer side. Previous our work, we found the two dimensions of satisfaction: novelty satisfaction and familiarity satisfaction from the point of dynamic aspect\cite{5}.

However we cannot understand the relation of service evaluation and service process. Because the method cannot be treated the differentiation of changing customer side and service provider side.

We cannot have the PDCA cycle if we cannot clear the structure regard to the dynamic aspect of such service evaluation. But, we can implement the PDCA cycle if we can understand the essential aspects.

1.2 Research Question and Objective

The criteria of service evaluation are different for each type of customer. And the criteria are affected by the change of characteristics of providing services. Therefore, we cannot interpret the which effect of service providers or customers if you cannot understand the service evaluation with providing the actual service. However, current stage, it is difficult to understand the relation of the criteria of service evaluation and the service characteristics because we cannot get those data.

This research is proposed the solution using the integration method of business process modeling and web questionnaire with connecting service evaluation. Typically, to integrate the measure for the characteristics of customer side and the represented characteristics of service provider side, we can propose the interpretation between service evaluation and service process.

1.3 Approach

We construct the integration method of business process modeling and Web questionnaire for collecting the data from customer side. Because, we can propose the evaluation method for more concrete information to using the integrated method of service evaluation and service process. Like a
service, we need to this approach for the changing structure of service providers and customers.

We use the ADOxx® approach[9], that are developing OMI Project in university of Vienna as a developing platform, and the result of ADOxx approach is utilizing several business area[3]. The ADOxx is the multi-modeling language that main feature is business process modeling language. The high flexible extension is suitable for our integration method of process modeling and web questionnaire.

Our proposed method is to connect the questionnaire and each service process. Typically, in the case of fixed service process, we can ask the question without modifying the structure of business process. But, in the case of not fixed service process, we need to ask by the question based on the actual service process.

Section 2, we show the position of our research relative to previous works. Section 3, we explain the proposed method. Section 4, we constructed the prototype models for fast food case and Japanese Sushi restaurant case. Section 5, we explain the implication. Section 6 is conclusion.

2 Related Works

The direction of service evaluation research is to be changing to the dynamic aspect from the static one. The base research of customer satisfaction is the disconfirmation model [6] and SERVQUAL [1] which is related to service quality. The research focusing the dynamic aspect is frequent analysis in relation to time[7,8]. In addition, the research for dynamic aspect of customer satisfaction is the KANO model [4] developed by Kano.

On the other hand, in the business process modeling, there is an issue of describing the dynamic structure. It is the problem how to describe the process for the object that is not predefined. Typically it is the issue how to include the ad-hoc feature in the business process modeling.

Current stage, it is difficult to pursue to the dynamic aspect of service evaluation by business process modeling. Furthermore it is important to represent the dynamic aspect by current technique of business process modeling.

This research is proposed the connection between business process and the service evaluation. By this approach, we can represent the method for service evaluation from customer side by dynamic process. The following section, we explain our proposed method.

3 Method

We use the ADOxx approach as a developing platform. ADOxx is the business process modeling for server side. In this here, we provide to customers the developing platform for business process modeling. By this way, we can involve customers not only to the service evaluation but also to make the structure of service process.

We construct the integrated method of business process modeling and web questionnaire. User of this modeling tool login the our server from their tablet device. And input the service evaluation data based on the business process modeling. These data are collected the database.

We proposed two models for describing the differentiation of the service processes. The characteristics of first service process is fixed process by definition. The other has a hybrid service process. We call the former is the context-free service model and the latter is the context-dependent service model. Context-free service model do not design for adaptation of heterogeneity of customers. Context-dependent service model have a adaptation feature for each customer.

3.1 Context-free Service Model

Context-free service model is based on the fixed structure of business process. User of this model input their service evaluation with fixed the node and link. In this here, the questionnaire is asked by 5 scales questions to each customer. These items are customer satisfaction, expectation, the gap of expectation. The evaluation data is sent to the database.

3.2 Context-dependent Service Model

Context-dependent service model is based on the hybrid structure of business process. In this here, the model is pre-designed the default service process. After providing the service, service provider send the pattern of the service processes and decide the actual service process. Customer responds the modified questionnaire.

4 Results

In this section, we constructed two prototype models. The first one is the context free ser-
service model and the second is context dependent service model. Typically, Context-free service model for aiming to the static structure of service model is tested by the Fast food case. And Context-dependent service model for aiming to the hybrid structure of service model is tested by the Japanese sushi restaurant case. Japanese sushi restaurants have an "Okonomi" style. Customers are the decision maker in relation to order process in this "Okonomi" style. Therefore the service process is not able to pre-design.

4.1 Case Study: Fast Food

Fast food case (Fig.1) for operating all over the world is to realize scale-up by designing their service process for the all type of customers. This service type is enabling to us the fixed service process with web questionnaire to customers. User selects the property of process and input the data related to service evaluation. In this case, user doesn’t need the modified structure of service process.

4.2 Case Study: Edomae-sushi

In Japan, high-end sushi service restaurant (Fig.2) is required the knowledge in relation to the sushi service for customers [2]. The chef understands the customer knowledge by first impression of order process for drink. He modifies the service process based on this decision. By this way, we cannot pre-design the structure of the service process.

For this flexible service process, service provider decides the pattern of service process providing to their customers for the web questionnaire. And customers input their service evaluation data based on the decided service process.

5 Implication

Implication for this research, we can interpret the service evaluation with connected the business process modeling and web questionnaire. By this way, we can implement the extended PDCA(Plan/Do/Check/Act) cycle for customer side.

In addition, like this questionnaire survey, we can divide the service process based on the maturity level of customer. To collect the data continuously, we are able to analyze the mechanism of changing process of customers’ criteria related to service evaluation.

6 Conclusion

In this paper, we proposed the integrated method of business process modeling and web questionnaire for deeper understanding of service evaluation. By this way, we can include the customer’s evaluation in the business process. Therefore, we can implement an extended PDCA(Plan/Do/Check/Act) cycle including the customer side.

However, in this stage, we constructed the prototype models only. Next step, we need to survey by actual data for empirical research. The targets of this empirical research are context-free service with static service process and context dependent service with flexible service process.

In this research, to develop the understanding to relation of service evaluation and service process, we can increase service quality by iterating improving process by PDCA cycle. Further-
more, in the point of interpretation of the service process, this research contributes to the knowledge engineering for the application to the service research.

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References