

Stakeholder Conflict Resolving Model in PSS Design

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Abstract

Introduction of a new Product-Service System (PSS) into an organization creates a need for change and can often be met with inertia. Successful implementation of a Product-Service System requires demonstrating an organizational vision and building a consensus among stakeholders involved. The purpose of this study is to propose methods for PSS design and its sustainable implementation. We use service design tools to assess stakeholder relationships and identify organizational constraints. We leverage the Theory of Constraints (TOC) to identify and align common organizational goals. And ultimately implement PSS in a manner that aligns both customer-side demands with internal stakeholders' requirement.

KEYWORDS: theory of constraints, product service system, design process, stakeholder conflict

Introduction

Product-Service System (PSS) design is a creative methodology to transform product into servicetised one (like Zip car), or service into productised one (like Automated Teller Machine) or product into one balanced with service (like coin operated Laundromat). Often service is an immaterial component but could be an essential quality of the system can provide with. (Shostack, 1984) Mont observed that our society is moving from producing and consuming products into replacing the traditional product with the provision of dematerialised system solutions. (Mont. O, 2000) Also Morelli pointed out that implementation of PSS design needs to optimally take care of users, designers and services providers. (Morelli, 2002) As with many initiatives that affect change in an organization, PSS introduction can be met with organizational inertia, which, if not handled properly, can

jeopardize the success of implementation in an organization. Even small improvement does not come free. (K. Choe & Herman, 2003) In some cases where implementation is successful, lingering after-effects can introduce negative value into the organization. An organization has stakeholders of groups and individuals who benefit from corporate actions and/or ones who are harmed by corporate actions. (Freeman R. E, 1984) Stakeholders are bound by both implicit and explicit contracts which exist between disparate groups such as the company, society, the broader market and specific individuals. The theory of stakeholder is for understanding how you sort out the conflicts among stakeholders. (Freeman R.E, 2008) All organization have an as-is balance between stakeholders. From this balanced as-is organization, cost of adaptation must be incurred to find a new balance required by a new PSS implementation. Such cost is inherently a risk for a new PSS design. If leadership fails to keep enough momentum to implement change and transform the as-is organization into a new balanced organization, stakeholders of the organization are inclined to revert to their previous state, as they are likely to view the previous state as more stable and comfortable. (Wallace, 2007) In a worst-case scenario, the system spends time and resources in attempting to change the organization in vain and revert to the previous state. Such failure may introduce organizational fatigue and prevent subsequent change initiatives from being implemented.

Hence, it is important that the leadership of new PSS provide a vision in leading stakeholders to a new consensus. This study proposes a method to reduce organizational inertia and implement PSS design.

In this study, we use a service design blueprint technique to identify stakeholders' relationship and structural constraints. Traditionally service blueprinting is able to identify failure points in a service operation. (Shostack, 1984) Nowadays service blueprinting is one of most popular service design technique. Because it is relatively simple and graphical representations are easy to understand for designers and all stakeholders involved. (Bitner, Ostrom, Morgan 2007).

A service blueprint technique allows a company to explore all the issues inherent in creating or managing services. (Shostack, 1984) It is especially useful to identify processes which are often unseen by customers. Though invisible, new design of hidden process can alter consumer perception (Shostack, 1984). A service blueprint may combine with PSS function modelling to define PSS elements as well. (Kim, Lee, Kim, Jeong, & Kim, 2012). Hence it is used for visual understanding of stakeholder relationships and structural constraints in this study.

The theory of constraints (TOC), originally developed by Goldratt, applies the cause-and-effect thinking processes to understand and improve all systems, but particularly, organizations. (Goldratt & Cox, 1984) The conflict from stakeholder issues can be explained as constraints. These constraints can be resolved by finding and agreeing on getting to a common goal, and identifying strong opportunity for both parties. A stakeholder is more likely to sacrifice its interest if he/she can derive new benefits or opportunities by getting to a common goal. Such a dynamic agreement helps to reduce the cost of change by reducing conflict from internal and external stakeholders.

Analysis of As-Is system: Case study of chicken delivery service

Chicken food delivery service by franchised brands in Korea is a popular product service business for people who want instant delivery food at a convenient place and time. It is also popular for small business owners who want to run a small delivery restaurant business with a limited initial capital outlay. There are ~35,000 fried chicken franchises in the Korean market. (I. Choe, 2011)

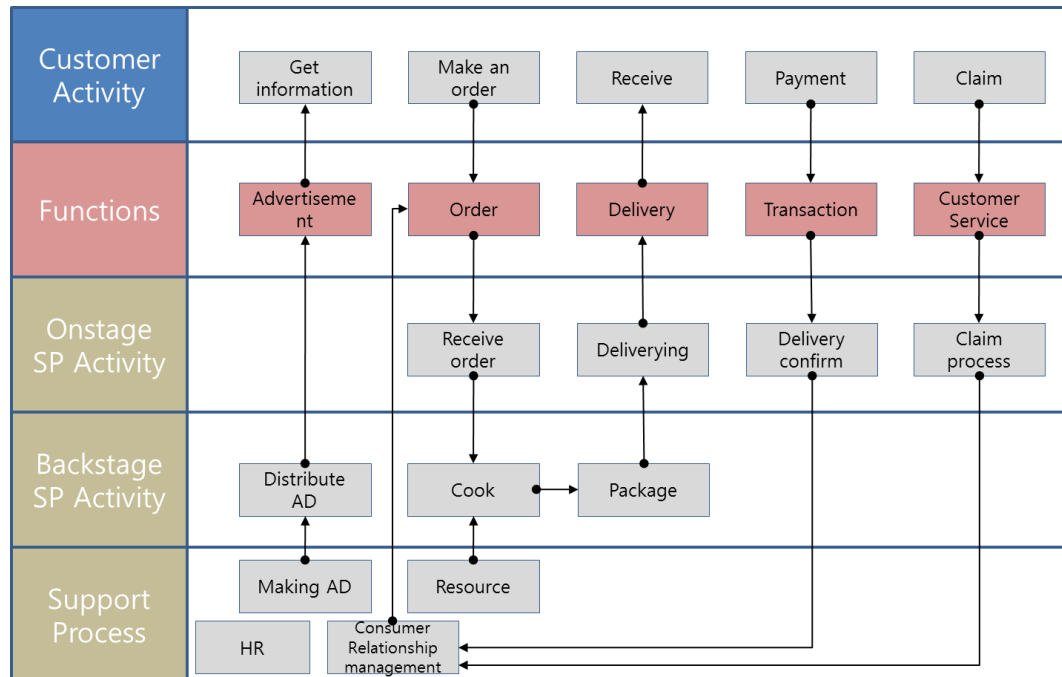


Figure 1 Service blueprint of a chicken delivery service

Figure 1 is the service blueprint of a chicken food delivery service. It was proposed from a PSS design workshop at Hongik University in 2010. In this proposal, designers propose a new innovative location based DB management system for telephone order to make deliver faster and more efficient. The proposal assumes all stakeholders will welcome the new idea and make efforts to deliver the best possible user experience. Analysis of stakeholder interest, however, reveals a different scenario and conflict. Delivery men who actually transport the food to the end consumer are important stakeholders, as they provide a touch point with consumers. As timely delivery is important for food quality, the role of delivery men cannot be under-stated. Given that restaurant managers do not accept an order from an “out-of –delivery” range, delivering within 30 minutes would appear an achievable goal. Capacity overflow (Shostack, 1987), or bad road conditions can introduce obstacles. Because many delivery men are minimum waged young people who are incentivized to deliver as much as possible, they are forced to drive at a speed, which might cause more accidents. Furthermore, many delivery workers use motorcycles, thus increasing the relative danger. This brings serious social debates and concern for their safety and wellbeing as well. (Lee, 2011) In Malaysia, the prevalence of non-standard helmet use amongst fast food delivery workers was 55.3%. Food delivery workers are often more exposed to the danger of serious road accident. (Kulanthayan, See, Kaviyarasu, & Nor Afiah, 2011).

Fast delivery is a benefit for a restaurant manager and consumers, but potentially as serious harm for delivery workers. The stress from this dangerous work could be a critical failure

point. It is a typical problem of constraints between employer and employees. Unsolved constraints will create conflict and friction and make it harder to achieve the goal. Leadership must be aware of such issues when implementing a new innovative product-service system design.

Theory of constraints

The theory of constraints (TOC) and thinking process (TP) has evolved since they were firstly introduced as an operations scheduling technique by E. M. Goldratt in 1979. (Goldratt & Cox, 1984) When constraints are physical, they can be relatively easily identified by undertaking capacity analysis. Non-physical constraints such as behaviors are harder to identify. The theory of constraints and thinking process are a set of logical tools that enables analysis of such nonphysical constraints. It consists of a set of six logical tools including Current Reality Tree (CRT), Evaporating Cloud (EC), Future Reality Tree (FRT), Negative Branch Reservation (NBR), Prerequisite Tree (PT), and Transition Tree (TT). (K. Choe & Herman, 2003)

From the chicken food delivery service blueprint, this study takes example of how constraints become friction to change and identifies unexpected effects. From service blueprint building and secondary research, a list of UnDesired Effects (UDEs) is identified as follows:

- » UDE1. A delivery was late so customer gets cold chicken
- » UDE2. Customer complains about late delivery and cold chicken
- » UDE3. Delivery worker have a road accident because of trying to deliver as fast as possible
- » UDE4. Delivery worker's delivery takes too much time and impact on later delivery
- » UDE5. As overall speed of delivery becomes slow so losing revenue
- » UDE6. As total turn of delivery becomes fewer so delivery worker can't get incentive
- » UDE7. As stress of delivery job is bigger, often delivery worker quit
- » UDE8. Delivery worker have anxiety and frustration
- » UDE9. Delivery worker get traffic violation ticket because of trying to deliver fast
- » UDE10. Customer's complain makes negative impact on the restaurant reputation.
- » UDE11. Lose market share and revenue.

These undesired effects need to be improved. After undesired effects are identified, current reality tree can be made.

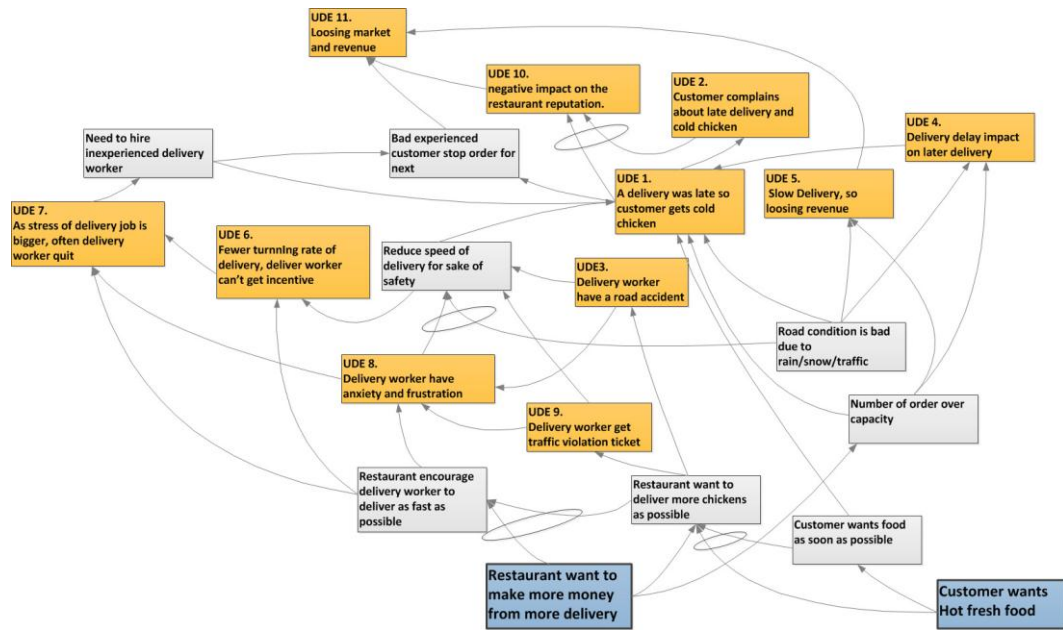


Figure 2 Current Reality Tree (CRT) of a chicken delivery service system

Figure 2 is displaying current reality tree. It is based on the analysis of the chicken delivery service constraints. It starts from a core conflict cloud which shows the most important conflict between stakeholders. It is developed into a current reality tree that validates the identification of the core conflict. The figure illustrates the existing cause-and-effect relationships of the subject and identifies the conspiring formal and informal factors that support the existence of the undesired effects. (K. Choe & Herman, 2003) The conflict between restaurant manager and delivery worker may cause some undesired effects which cause bad service quality and unsatisfactory consumer experiences. Of course, it is bad for the business. The analysis of current reality tree shows there were two basic needs: 1) Restaurants want to maximize profit through increased delivery and 2) Customers want hot fresh food. To satisfy these two needs, the delivery system needs to increase efficiency of delivery and capacity of delivery as well. The restaurant manager and delivery worker have an inherent tension, which is difficult to resolve and traps the organization. To resolve the conflict, we need to understand the socio-cultural dimension of the service along with technological and organizational dimensions. (Morelli, 2003)

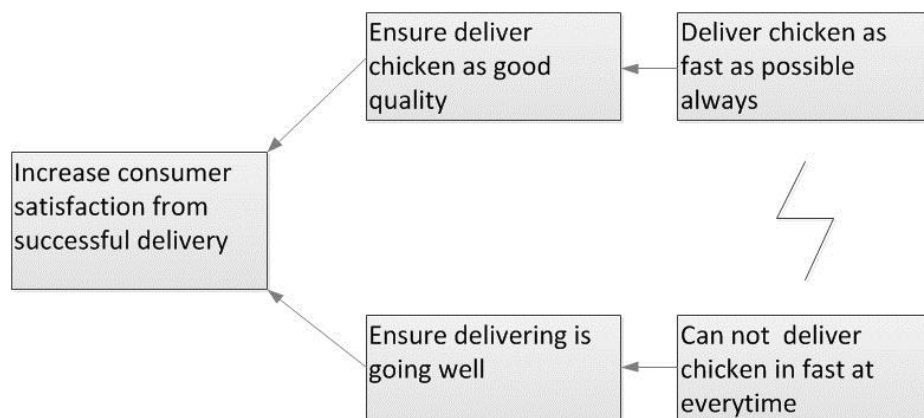


Figure 3 The Evaporating Cloud (EC) of a chicken delivery service

Figure 3 is the evaporating cloud (EC) of the chicken delivery service. It used a theory of constraints & thinking process tool from current reality tree analysis on the chicken delivery service. The core conflict seems difficult to solve, but evaporating cloud shows the possibility of a solution by injecting a new assumption: "Let delivery process be transparent for delivery worker, restaurant manager and consumer". With this injection, from current reality tree and evaporating cloud, we could make future reality tree. A PSS designer can make iterative prototyping and test process until finding a right solution.

The leadership

Workers should not be blamed for flaw in a process but the leadership should be responsible. (Shostack, 1984) Regarding change in organization, Michael Beer and Nitin Nohria discussed theory E and O for company leadership. Theory E is a strategy which involves heavy use of economic incentives, layoff, down-sizing, and restructuring. On the contrary, theory O is a strategy which is geared toward building corporate culture: employee behaviors, attitudes, capabilities, and commitment. (Beer & Nohria, 2000) Even though it is discussed in context of running a big global company, the same theory can be applicable to a much smaller organization such as chicken delivery service. Via theory E, the restaurant manager can propose an incentive system for workers with faster delivery records, and threaten to fire delivery workers for failing to satisfy targets. (Beer & Nohria, 2000) This may also cause serious undesired effects. In Korea, food delivery workers are younger (18-24 years old). Usually a part time delivery worker can make 4-5 USD for an hour. From one successful delivery, he may get incentives of (33-40cents USD) as well. Fast delivery incentives can cause more road accidents. Total casualty of traffic accident from food delivery (Pizza, Chinese food, and chicken) was 4,098 cases from 2005 to 2009 in Korea. It has become a serious social and labor issue. (Jo, 2011) Of course, it is serious trouble not only for delivery workers but for society as well. The following news story tells what might happen in a worst case. In early 2012, a customer ordered pizza on a cold winter day for his kids. Due to bad road condition, the delivery was late, and the pizza was cold. The consumer was verbally abusive about the late delivery and threw the pizza on the worker's face. (Cho, 2012) Faster delivery service for best user experience seems to have much more serious problem. If we approach the problem from theory O, a restaurant manager can build an organizational culture and capability offering benefit to both internal and external stakeholders rather than a time measured incentive. But if still consumer receives cold food, innovative consumer experience is not satisfied. More undesired effects may happen again. The leadership of a delivery service restaurant needs to understand that simply finding a new balanced relationship cannot create real value and help organizations reach the ultimate innovative goal. So leadership direction based on theory E or theory O may not be sufficient for solving the problem.

Solution proposal

Figure 4 shows how desirable effects (DE) can be induced by injections. Desirable effects are what to change to.

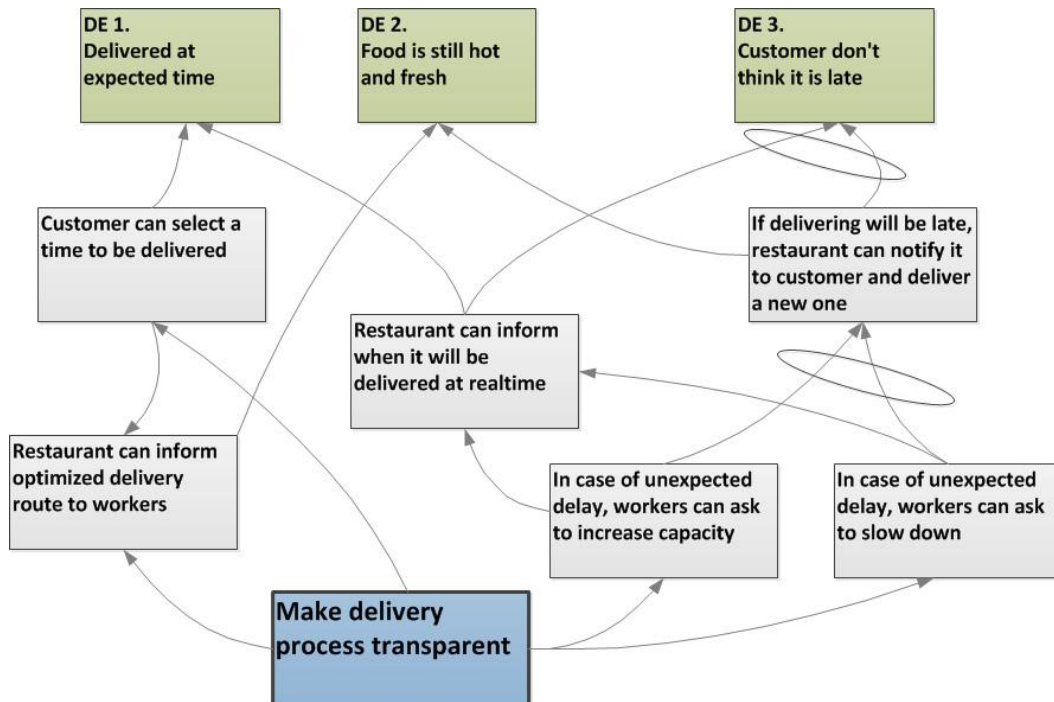


Figure 4 Future Reality Tree (FRT) for innovative chicken delivery service

In the case study of chicken food delivery, a restaurant manager and delivery workers want to deliver ordered food as soon as possible and as frequently as possible. For the consumer, fast delivery is welcomed as well. In the consumer's case, however, fast delivery means fresh hot food. If the consumer can expect when food is delivered, the consumer may have more tolerance for late delivery. Hence rephrasing "In 30 minute delivery" to "Fresh hot food as same as in restaurant" might avoid the problems in fast delivery. Now, the restaurant's delivery service can focus on "Fresh hot" and the common goal is "Increase consumer satisfaction from successful delivery" by sharing information of transparent delivery process among restaurant manager, delivery worker and customers. Rephrasing the service concept, the designer might propose IT solutions such as Real Time location based delivery monitoring system for transparent delivery process, and invest in equipment such as a heating carrier. Central to this change is that leadership should have the fundamental approach of mobilizing and motivating individual human talent for building a service solution. (Rosabeth, 1999) It is also important that the proposed innovative solution is focused on both operational and relational capabilities for customer satisfaction. (Zhao & Stank, 2003)

PSS exploration-design model

Figure 5 shows a proposed PSS design process by this study as a model including stakeholder conflicts resolving method:

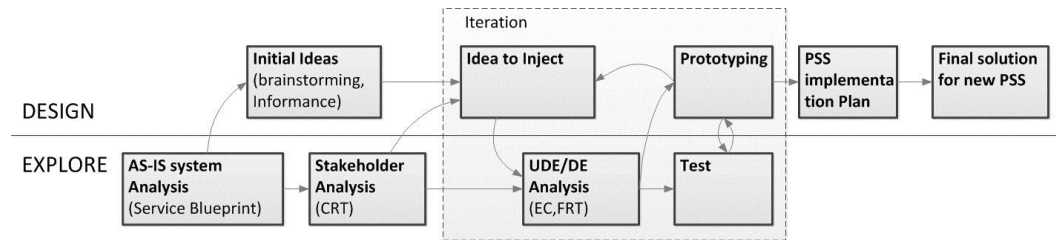


Figure 5 PSS exploration-design model

From As-Is system analysis, the process goes back and forth between design phase and exploration phase. Iterative process to find an innovative PSS design is repeated between idea to inject and test. Then, a final solution can be delivered with implementation plan.

Conclusion

Service design tools such as service blueprint and stakeholder analysis are useful methodology in identifying relationships among stakeholders. Theory of constraints and thinking process tool such as current reality tree, evaporating cloud, future reality tree are also useful for innovative service design implementation. From this understanding, we can expect any new PSS design proposal to impose impact on stakeholder relationships and may introduce undesired effects. Many service design innovation researchers have focused on improving touch points with bad experience and optimizing the user experiences at these touch points. But in the case where touch points have no human to human interface, we need to consider more variables from “hidden” areas of the service. It is more difficult to control the quality of a PSS than that of a product due to unexpected contextual change. (Clatworthy, 2010) A product service system design for change is neither easy nor free of stakeholder conflicts. Moreover, these undesired effects will be a cost burden in achieving innovation goal.

In implementing PSS design innovation, conflict in the stakeholder relationships can jeopardize goal achievement. Leadership must understand before decision-making both what the undesired effects are and how to turn those into desired effects and induce the organization to adapt to the desired direction. Leadership implementing new PSS design should consider all external stakeholders’ demands together with internal stakeholders’ demands to allow new service design to satisfy the multi-dimensional stakeholder relationships. Hence, designing an innovative PSS requires a holistic vision of the goal which includes a well thought-out method of reducing conflict amongst stakeholders in the system in order to maximize value creation within the organization.

Further study

In this study, the problem of internal stakeholders' conflicts and its resolving model for service innovation has been discussed; however similar conflict may exist in customer relationship management as well. A change from as-is system will cause conflict from customers as well. Even though it promises better value for customer experience, some customers may resist adapting themselves into new product service system environment. Actually it is some cost for customer as well. For further study, focus will be on the dynamic structure of customer-service provider relationship in product service system innovation.

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