A Study on the Driving Factors of Service Modularization

Hui-Yu Yang, National Chung Hsing University, Taiwan
Ying-Jiun Hsie, National Chung Hsing University, Taiwan

The Asian Conference on Psychology & the Behavioral Sciences 2014
Official Conference Proceedings 2014
0434

Abstract

In recent years, the scale of service industry is increasing rapidly. Considering the growing divergence of customer needs and intensive competition environment, service providers try to use cost-efficient and flexible approaches to fulfill each customer's personalized request. Thus, how to meet an increasing demand for various customized services at reasonable cost becomes an important issue. Modularization has been regarded as an important element of achieving mass customization in products and services. Service modularization represents a feasible approach to solve this issue. However, there is little research focusing on the topic of service modularization. This paper reviews the extant service literature and discusses the driving factors of service modularization. The findings help service firms understand how they can modularize their services.

iafor
The International Academic Forum
www.iafor.org

I. INTRODUCTION

Over the past few decades of growing significance of service industry, a number of issues have appeared such as growing divergence of customer needs, increasing cost pressure, competition intensity. The customers' demands for personalized services are increasing, even though these requests are constantly changing and not easy to ascertain. The field of basing individual customers' needs and delivering services to them cost-efficiently becomes a popular issue (Ma, Wang, & Xu, 2011).

Service providers use the strategy of mass customization to offer flexible and cost-efficient services to satisfy their customers' individual demands. At the same time, modularity has long been regarded as a crucial element of achieving mass customization in products and services(Bask, Lipponen, Rajahonka, & Tinnilä, 2011).

The benefits of modularity are well discussed in the existent literature. For instance, service modularity is flexible and open for tailoring and at the same time achieves efficiency to offer superior value to customers.(Rahikka, Ulkuniemi, & Pekkarinen, 2011). More, service modularity can accelerate service product innovation of firms, provide more personalized service and help acquire scale economic effects (Ma et al., 2011). Therefore, modularity can be seen as an approach to develop services and manage variability in demand, which is why it deserves further research attention.

II. RESEARCH METHOD AND FINDINGS

There is growing interest in subjects correlated to modularity, which were already been quite recognized in manufacturing industry, such as industrial engineering, software engineering(Böttcher & Klingner, 2011). We review extant literature about the modularity-related themes and find there is no one universal definition of modularity (Gershenson, Prasad, & Zhang, 2003). Even if advantages of modularity have long been recognized, the research of service industry is still insufficient.

The most common definition of modularity is referred as "the degree to which the systems components can be separated and recombined to generate a diversity of configurations with its functionalities" (Schilling, 2000). With the view of modularity, the service components can be regarded as the smallest building block or module (Voss & Hsuan, 2009). Bask, Lipponen, Rajahonka, and Tinnilä (2010) argue that "A modular system as a system built of components, where the structure ("architecture") of the system , functions of components ("elements" or "modules"), and relations (interfaces) of the components can be described so that the system is replicable , the components are replaceable, and the system is manageable."

What factors drive service providers to do service modularization? We follow Voss and Hsuan (2009) and adopt the concept of product architecture to conceptualize service architecture. They argue that service industry can breakdown into characterized service package/component. In this study, we use the term "service package" to represent a module. Each package has functional properties to offer functionalities, such as customer and provider objectives, standardized classification, change of properties, etc.(Böttcher & Klingner, 2011).

One of best solutions to satisfy customers' needs and achieve service providers' goals

in service modularization is to use an integrated planning and control system. To plan, schedule and budget for whole service structure and short-term objectives for service package. Each organizational units and individuals has clear definitions of their own responsibility in the service. When service breakdown structure is established, it helps to track for the cost and performance of individual service package. Thus, problems can be quickly discovered and coordinated.

One of the characteristics of services is that they produced and consumed simultaneously. Meanwhile, the service product can be the service process and many services can be regarded as products. The interface is an important feature of service architecture. The interfaces of services include people, information, and rules governing the information flow (Voss & Hsuan, 2009).

As result of previous theory that we decompose a service process into service packages and every packages is timely relative. Therefore, it needs to estimate the cost of time for each service package. In the process breakdown structure, it means the delivering of previous service package as an output which needed to be checked to ensure phase of current service package were accomplished and qualified to next phase.

To summarize few points of our findings, it is necessary to clarify what you expect to deliver your service to customers first. In addition, it is important to make sure service performance meets all what your customers' needs. Second, concerning about time, cost, labor, equipment and objectives of individual service package to perform and to influence whole service process, it is necessary to control duration of each service package with specific start and finish time in service modularization. Especially, critical service package should not be delay.

III. CONCLUSION

We try to review the existent literature concerning about modularity and to find enablers of modularity in the context of service. Through this study, it helps managers to know the anticipants of service modularization and implement modularity in their service production accordingly. Thus, contribute better customer value and profitability in the competitive market. On the other hand, this study presents a basis for the development of service modularization and points to new possibilities for further research.

REFERENCES

Böttcher, M., & Klingner, S. (2011). Providing a method for composing modular B2B services. *Journal of Business & Industrial Marketing, 26*(5), 320-331. doi: 10.1108/08858621111144389

Bask, A., Lipponen, M., Rajahonka, M., & Tinnilä, M. (2010). The concept of modularity: diffusion from manufacturing to service production. *Journal of Manufacturing Technology Management, 21*(3), 355-375. doi: 10.1108/17410381011024331

Bask, A., Lipponen, M., Rajahonka, M., & Tinnilä, M. (2011). Framework for modularity and customization: service perspective. *Journal of Business & Industrial Marketing, 26*(5), 306-319. doi: 10.1108/08858621111144370

Gershenson, J. K., Prasad, G. J., & Zhang, Y. (2003). Product modularity: Definitions and benefits. *Journal of Engineering Design, 14*(3), 295-313. doi: 10.1080/0954482031000091068

Ma, F., Wang, L., & Xu, H. (2011). Dynamics mechanism and innovation model of service modularity. *In Artificial Intelligence, Management Science and Electronic Commerce (AIMSEC), 2011 2nd International Conference on*, pp. 1077-1080.

Rahikka, E., Ulkuniemi, P., & Pekkarinen, S. (2011). Developing the value perception of the business customer through service modularity. *Journal of Business & Industrial Marketing, 26*(5), 357-367.

Schilling, M. A. (2000). Toward a general modular systems theory and its application to interfirm product modularity. *Academy of management review, 25*(2), 312-334.

Voss, C. A., & Hsuan, J. (2009). Service architecture and modularity*. *Decision Sciences, 40*(3), 541-569.