



การประชุมวิชาการและนำเสนอผลงานวิจัยระดับชาติและนานาชาติ ครั้งที่ 10  
"Global Goals, Local Actions: Looking Back and Moving Forward"

## The effect of Hotel Absorptive Capacity on Service Innovation: Knowledge-based Technology as Catalyst

Poh Wai Choo<sup>1</sup>

stevenchoo0611@yahoo.com.sg

Cheng Ling Tan<sup>2</sup>

tanchengling@usm.my

<sup>1,2</sup> Graduate School of Business, Universiti Sains Malaysia, 11800, Penang, Malaysia,

### Abstract

The objective of this study is to provide the theoretical justification related to positive influences of knowledge-based technology (KBT) and hotel operational absorptive capacity (OAC) on service innovation. This study has reviewed related literature published between 1990 and 2018. The finding of this study proposes a theoretical model -- knowledge-based technology (KBT) facilitates potential OAC process which enables a hotel to create stock of new knowledge to innovate, and realized OAC process enables a hotel to utilize stock of new knowledge to innovate. The proposed model contributes to an effective systemic operational knowledge to improve service innovation.

**Keywords:** Innovation, Absorptive capacity, Technology

### Introduction

The aim of this study is to improve performance of service innovation for 4-and-5-star hotels. Owing to the need to remedy the problem of Malaysian hotel market saturation due to over-supply of hotel rooms (Bavani, 2016 February 23), this study attempts to design an effective systemic operational knowledge for hoteliers and researchers to increase the feasibility to explore and apply new knowledge through hotels' capability of operational absorptive capacity (OAC) process and with the support of an effective knowledge-based technology (KBT) to create and deliver differentiated service innovation.

### *Absorptive Capacity theory*

Organisational absorptive capacity theory of this study assumes that, (1) absorbing external new knowledge can help a hotel to become more innovative and flexible to achieve a higher level of performance; (2) a hotel with a higher ability for absorbing new knowledge will have a competitive advantage over hotels with lower abilities to absorb and (3) a hotel requires an internal knowledge-based technology to enable it to efficiently



การประชุมวิชาการและนำเสนอผลงานวิจัยระดับชาติและนานาชาติ ครั้งที่ 10  
 "Global Goals, Local Actions: Looking Back and Moving Forward"

absorb and apply external new knowledge (Choo & Tan, 2017; Mills, 2012; Zahra & George, 2002; Cohen & Levinthal, 1990).

### Objectives

The main objective of this study is to design a theoretical framework that identifies the significant influence of knowledge-based technology and operational absorptive capacity on service innovation for 4-and-5-star hotels in Malaysia.

### Research Scope

Based on the underlying organizational absorptive capacity theory and synthesized literature review, the proposed theoretical framework for this study is shown in figure 1

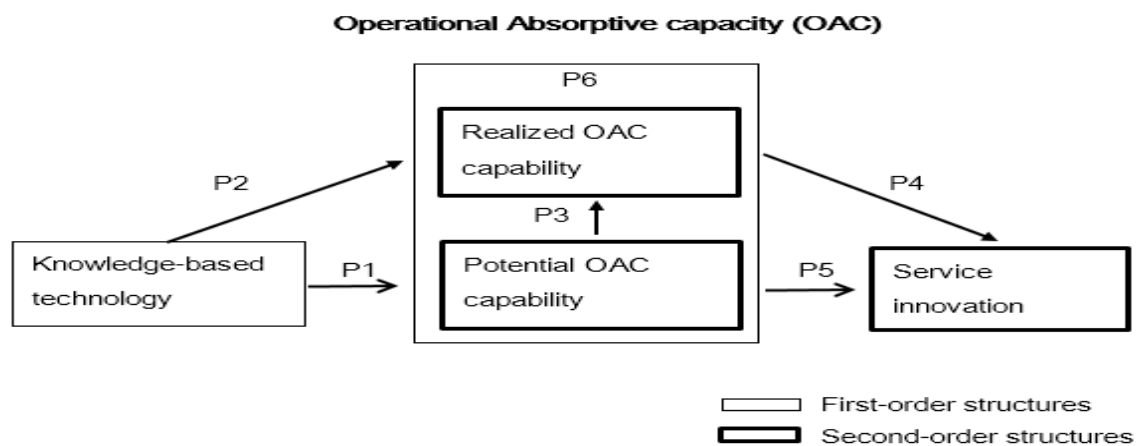


Figure 1. Proposed research theoretical framework

### Literature Review

#### Knowledge-Based Technology (KBT)

Effective use of knowledge-based technology (e.g. ICT -information and communication technology) makes innovation development relatively easier and more cost-effective (Salem, 2014). The effects derived from the use of knowledge-based technology (e.g. ICT) (Salem, 2014) can be a source of improvement in operating efficiency and better customer service levels (Sahadev & Islam, 2005). ICT can transform business processes and facilitate creativity in making new products/services that are not operational and not economically feasible without the use of ICT (Arvanities & Loukis, 2016). Knowledge-based technology helps hospitality industry operators to keep up with the trends of customers, monitor the actions of competitors and obtain feedback from users quickly, thereby, helping them to seize opportunities for differentiated innovation (Arvanities & Loukis, 2016).



การประชุมวิชาการและนำเสนอผลงานวิจัยระดับชาติและนานาชาติ ครั้งที่ 10  
"Global Goals, Local Actions: Looking Back and Moving Forward"

### ***Potential operational absorptive capacity (POAC) process***

To achieve success of “acquiring” and “assimilating” knowledge (POAC) from external environment, a hotel requires Frontline managers’ experiences/cognition from departments of hotel operations. Collective frontline managers’ experiences/ cognition increase the capability of “acquisition” process to obtain valuable external knowledge/ intelligence. Collective operational departments should attempt to use “assimilation” process to gauge the extent of acquiring reliable external knowledge to be well integrated into existing internal knowledge-based environment (Setia & Patel, 2013).

### ***Realized operational absorptive capacity (ROAC) process***

ROAC capability refers to knowledge utilization through operation management (OM) processes that “transform” and “apply” knowledge (Setia & Patel, 2013). The source of performance improvement of a hotel is dependent on the capability to apply its knowledge resources (intellectual asset) derived from POAC process in order to create and deliver differentiated products and services which are responsive to its hotel guests’ needs and complaints. The absorptive capacity theory of the organization assume that the major source of competitiveness rest in the ROAC capability to apply knowledge and not in the POAC capability to create new knowledge per se (Setia & Patel, 2013; Miles, 2012). No organization can survive in the global competitive market in the long run unless the knowledge it creates is applied in one way or the other (Nielsen, 2006).

### ***Service Innovation***

Service innovation is an execution of individual-level employee service innovation behavior (ESIB) (e.g. frontline employees/managers) and collaborative teamwork between and among individuals from frontline employees/ managers in same/different department (s) of hotel operations in successful implementation of organisational-level new service development (NSD). Combination of ESIB (Scott & Bruce, 1994) and NSD (Matear, Gray & Garrett, 2004) is integrated execution of two-level service innovation (Hu, Horng & Sun, 2009).

## **Research Operation**

### ***Methodology***

In designing the research propositions, this research has screened and synthesised a total of 13 high-quality academic journal articles from 1990 to 2018. For reasons of credibility and manageability, the samples are limited to A\*, A and B (top three tiers) (ABDC, 2017). Group 1 comprises 3 academic journal article covering knowledge-based technology.



การประชุมวิชาการและนำเสนอผลงานวิจัยระดับชาติและนานาชาติ ครั้งที่ 10  
"Global Goals, Local Actions: Looking Back and Moving Forward"

Group 2 comprises 7 academic journal articles pertaining operational absorptive capacity and group 3 comprises 3 academic journal articles related to service innovation.

## Research Propositions

### ***Knowledge-based technology (KBT) and potential operational absorptive capacity (POAC)***

Frontline managers who champion the knowledge-based technology (e.g. ICT-information and communication technology) should attempt to increase the activities of inter-departmental collaboration, communication and facilitate the flow of knowledge. These knowledge-based technology (e.g. ICT) activities can create a higher competency of technical and informative coordination on POAC. Knowledge-based technology (e.g. ICT) is an enabler for collective frontline managers/ employees to “acquire” and “assimilate” reliable knowledge from both internal and external hotel environment. Based on these arguments, a research proposition is suggested:

*P1: Knowledge-based technology (KBT) has a positive influence on potential operational absorptive capacity (POAC).*

### ***Knowledge-Based Technology (KBT) and Realized Operational Absorptive Capacity (ROAC)***

Higher capability of knowledge-based technology (e.g. ICT- information and communication technology) enhances frontline individuals (frontline managers/ employees) operational coordination activities which are crucial in managing inter-departmental competencies (Salem, 2014). Knowledge-based technology (e.g. ICT) capability within and across departments of hotel operations enhances ROAC “transformation” and “application” of newly integrated operational knowledge to innovate. Based on these arguments, a research proposition is suggested

*P2: Knowledge-based technology (KBT) has a positive influence on realized operational absorptive capacity (ROAC).*

### ***Potential Operational Absorptive Capacity (POAC) and Realized Operational Absorptive Capacity (ROAC).***

Higher capacity of knowledge acquisition and assimilation (e.g. POAC) do not necessarily imply more innovative hotels, unless this POAC positively influences ROAC. (Setia & Patel, 2013). POAC capability is a process of “acquiring” and “assimilating” reliable valuable stocks of external knowledge. ROAC capability is the next logical step to transform existing operational knowledge that could not be assimilated (in POAC) (Zahra & George,



การประชุมวิชาการและนำเสนอผลงานวิจัยระดับชาติและนานาชาติ ครั้งที่ 10  
"Global Goals, Local Actions: Looking Back and Moving Forward"

2002). Thereafter, the applied new competency of transformed operational knowledge-based resource (intellectual asset) is utilized for innovation. Based on these arguments, a research proposition is suggested

*P3: Potential operational absorptive capacity (POAC) has a positive influence on realized operational absorptive capacity (ROAC).*

#### ***Realized Operational Absorptive Capacity (ROAC) and Service Innovation (SI).***

ROAC transformation represents an alternative process to POAC assimilation. The ROAC facilitates a hotel's innovation capacity through the application of integrated specialised knowledge acquired from both internal and external hotel environment. Therefore, service innovation can be considered as the output from the deployment effectiveness of ROAC (Setia & Patel, 2013). Based on these arguments, a research proposition is suggested

*P4: Realized operational absorptive capacity (ROAC) has a positive influence on service innovation (SI).*

#### ***Potential Operational Absorptive Capacity (POAC) and Service innovation (SI).***

With higher POAC, either frontline individuals or collective individuals from departments of hotel operations can access and adopt diverse external knowledge. During the process of POAC, reliable external new knowledge can fit well into existing knowledge base as it has been slightly altered. The process of POAC triggers the generation of creative ideas of individual-level employee service innovation behavior (ESIB) and organisation-level new service development (NSD). These arguments lead to a research proposition:

*P5: Potential operational absorptive capacity (POAC) has a positive influence on service innovation (SI).*

#### ***Realized Operational Absorptive Capacity (ROAC) as a Mediator.***

According to the arguments for P2 and P4 as well as the assumptions from absorptive capacity theory, ROAC is a primary source of improvement for innovation and expected to mediate the relationship between knowledge-based technology and service innovation (Choo, Tan, Fernando, 2018). ROAC is theoretically justified as a primary source of organization performance (Kang & Lee, 2017; Petti & Zhang, 2016; Leal-Rodríguez, Ariza-Montes, Roldán & Leal-Millán, 2014) for service innovation. These arguments lead to the following research proposition:

*P6: Realized operational absorptive capacity (ROAC) mediates knowledge-based technology (KBT) and service innovation (SI).*



การประชุมวิชาการและนำเสนอผลงานวิจัยระดับชาติและนานาชาติ ครั้งที่ 10  
"Global Goals, Local Actions: Looking Back and Moving Forward"

## Conclusion

Continuously replenishing of outdated knowledge through the support of Potential Operational Absorptive Capacity (POAC), Realized Operational Absorptive Capacity (ROAC) and Knowledge-Based Technology (KBT) is to bring about improved differentiated service innovation (SI). Thus, attracts more tourists and increases occupancy of 4-and-5- star hotels in Malaysia.

## References

- ABDC (2017). Australia Business Dean Council 2016 master journal list, Retrieved on January 1, 2019 from <http://www.abdc.edu.au/master-journal-list.php>
- Arvanities, S., & Loukis, E.N. (2016). Investigating the effects of ICT on innovation and performance of European hospitals: an exploratory study, *European Journal of Health Economics*, 10, 1-35.
- Bavani, M. (2016, Feb 23).The Star Online: Freeze on approval of hotel licences in KL, Retrieved on January 1, 2019 from <https://www.thestar.com.my/metro/community/2016/02/2>
- Choo, P.W., Tan, C.L., & Fernando, Y. (2018). Managing knowledge, service innovation and service experience in Hospitality Industry: A proposed framework, Proceedings of the 6th ICBSI, Bangkok University Thailand, 24-25 May 2018, *Academic Conferences and Publishing International Limited*, 78- 86.
- Choo, P.W., & Tan, C.L. (2017). The Effect of Absorptive Capacity on Team-level Innovativeness: Knowledge Sharing as Catalyst, Proceedings of the 14<sup>th</sup> ICICKM, The Hong Kong Polytechnic University China, 7-8 December 2017, *Academic Conferences and Publishing International Limited* , 55-62.
- Cohen, W.M., & Levinthal, D.A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation, *Administrative Science Quarterly*, 35(1), 128-152.
- Hu, M.L.M., Horng, J.S., & Sun, Y.H.C. (2009). Hospitality teams: Knowledge sharing and service innovation performance, *Tourism Management*, 30, 41-50.
- Kang, M.Y., & Lee, M.J. (2017). Absorptive capacity, knowledge sharing, and innovative behaviour of R&D employees, *Technology Analysis & Strategic Management*, 29(2), 219-232.
- Leal-Rodríguez, A.L., Ariza-Montes, A., Roldán, J.L., & Leal-Millán, A. (2014). Absorptive capacity, innovation and cultural barriers: a conditional mediation model, *Journal of Business Research*, 67, 763–768.



การประชุมวิชาการและนำเสนอผลงานวิจัยระดับชาติและนานาชาติ ครั้งที่ 10  
"Global Goals, Local Actions: Looking Back and Moving Forward"

- Matear, S., Gray, B.J., & Garrett, T. (2004). Market orientation, brand investment, new service development, market position and performance for service organisation, *International Journal of Service Industry Management*, 15(3), 284-301.
- Mills, J.A. (2012). *Management and Organization Theory*, John Willy & Sons Inc: San Francisco.
- Nielsen, A.P. (2006). Understanding dynamic capabilities through knowledge management, *Journal of Knowledge Management*, 10(4), 59-71.
- Petti, C., & Zhang, S. (2016). The role of absorptive capacity in Chinese firms", *Measuring Business Excellence*, 20(2), 1-12.
- Sahadev, S., & Islam, N. (2005). Why hotels adopt ICTs: a study on the ICT adoption propensity of hotel in Thailand, *International Journal of Contemporary Hospitality Management*, 17(5), 391- 401.
- Salem, I.E.B. (2014). Toward better understanding of knowledge management: correlation to hotel performance and innovation in five-star chain hotels in Egypt, *Tourism and Hospitality Research*, 14 (4), 176 – 196.
- Scott, S.G., & Bruce, R.A. (1994). Determinants of Innovative Behavior: A Path Model of Individual Innovation in the Workplace, *The Academy of Management Journal*, 37(3), 580-607.
- Setia, P., & Patel, P.C. (2013). How information systems help create OM capabilities: Consequents and antecedents of operational absorptive capacity, *Journal of Operations Management*, 31(6), 409-431.
- Zahra, S.A., & George, G. (2002). Absorptive capacity: A review, reconceptualization, and extension, *Academy of Management Review*, 27(2), 185-203.