SERVICE INNOVATION THROUGH TECHNOLOGY AND INFORMATION SYSTEM (TIS) FACILITIES
(STUDY CASE TICKETING ONLINE IN PT. KERETA API INDONESIA)

AgusHariyanto
Student of Gadjah Mada University – Karlstad University
MSTT-Master of Science in Business Administrastion
Phone : +62 81390281677
aguzt2002@yahoo.com

Samuel Petros Sebhatu
Assistant Professor Karlstad University
Master of Sceince in Business Administration
Phone: +46 54 7002163
samuel.sebhatu@kau.se

Ahmad Munawar
Professor
Departement of Civil and Enviromental Engineering,
Faculty of engineering Universitas Gadjah Mada
Phone : +62 274 545675
amunawar@mstt.ugm.ac.id

Abstract

The Service Innovation perspective is important for organization because it's necessary to make a sustainable business operation in the future.In the context of implementation of Technology Information, the perspective of Service Innovation is also important. This phenomenon has also occure to PT.KAI in their effort to change in development of Technology Information System facilities in their busines process. The purpose of this study is to understand the role of Service Innovation perspective driving in the implementation of Technology Information System (TIS) in organization of services and To understand how should have PT.KAI do to maintain and enhance the level of success in implementation of TIS facilities specific online ticketing base on the perspective of Service Innovation. In the process of developing a Service Innovation through implementation of TIS facilities, an organization must follow the base on theory Success IT adoption in Service Organization. Research Design base on qualitative research; interview and FGD are conducted to people who have passionate with train's services by PT.KAI. The result from the empirical study showed there were several problems occurred although there are many improvements as well in the implementation of TIS facilities specific online ticketing by PT.KAI.

***Keyword**: Service Innovation Development, Technology and Information System, Online Ticketing, Success of IT adoption, Value Co-creation process, PT.KAI,SJ.AB.*

INTRODUCTION

The Service Innovation perspective is important for organization because it's necessary to make a sustainable business operation in the future. This was also true for organization or company engaged in the transportation sector like PT.KAI. Actually, customer when purchasing something they were looking of service value, problem solver and good experience in the business propose by organization (Anders & Michael D 2003). Based on Edvardsson (2005) stated that service is value propose from the organization in the market when value created base on customer lens, interactive relationship and the characteristic of service. In some case of organization, division of IT and marketing is as two different poles that not work in synergy but only doing their "Job description". Vargo&Lusch (2004) stated that Service Dominant logic focus on intangible resource, co-creation and relationship. The ability of an organization to transform or innovation on service concept through technology and information system has to be the main driver whether an organization will gain as winner in the competition or contrariwise. This phenomenon has also occure to PT.KAI in their effort to change in development of Technology Information System facilities in their busines process of PT.KAI. It's expected to success when implemented in the area, but on the other hand the data and fact state that there is problem appear in the implementation of online ticketing in PT.KAI. Systems on line is still met a number of problems and the data showed although the PT KAI has implemented the

system on line ticketing, more than 90% of the passenger train still choose to buy train tickets traditionally at the counter of the PT. KAI station rather than opening in the internet (Atiks S 2012). The purpose of this study is to understand the role of Service Innovation perspective driving in the implementation of Technology Information System (TIS) in organization of services and To understand how should have PT.KAI do to maintain and enhance the level of success in implementation of TIS facilities specific online ticketing base on the perspective of Service Innovation. This is qualitative research; interview and FGD are conducted to people who have passionate with train's services by PT.KAI.

DATA COLLECTION

1. Primary data

The primary data of this study are about what people perceive regarding the value propose in the implementation of TIS facilities specific online ticketing in order with innovation in service by PT.KAI. Survey is based on FGD and Interview to gathering data information about the implementation of TIS facilities specific online ticketing in PT.KAI. Respondent in FGD follow by 8 people and take time about 20 minute in discussion relating in this case. Interview for train's user selected base on respondent observation in the field and Social media i.e. Trains community in facebook and twitter, but to interview the respondent the author have 2 methods. First, direct phone call and second, send email first to make appointment and then if deal about date and time the author call by phone to interview the respondent. Whereas the respondents for interview follow by 25 people and in the interview process average take time about 10 minute. Moreover, the primary data from the Management of PT.KAI was collected based on interview by phone.In the interview with the management of PT.KAI, conducted with Mr. DedetMarsono as staff in IT support. Interview process by phone and take time about 30 minute and informal conversation has been done between us.

2. Secondary data

The secondary data is a literature review and other supporting data collected previous Thesis such as data from e-library, internet, book relating with Service Innovation perspective and strategy implementation new technology specific online process.

THEORETICAL FRAMEWORK

1. Service Innovation.

Innovation in services is not easy and the big challenge is how to manage this innovation to effectively and deeply understanding the social phenomenon in business market. Innovation is a process rather than an event and it doesn't just happen solely. This is about the long process of an invention of bringing good idea to extensive and effective use. Service innovation is viewed in broader and unifying context of building business strategy and simultaneously. Base on Anders & Michael D (2003) the development of Service innovation divides in 3 processes that every process has own step and every process or step have an own life cycle that related each other. This 3 process consist of Service Maintenance, Improve Service Performance and the last Service Innovation. All this processes, namely with Natural Progression of the Service Development of Hierarchy.

2. Value Co-Creation Process.

Activities of value co-creation process base on Prahald's (2004);Gebauer et al. (2010) dividing in 5 strategy 1) customer engagement; 2) self-service; 3) customer experience; 4)

problem-solving; and 5) co-designing. More detail of each activity is simple explored below.

a. Customer engagement.
   Customer engagement is strategy of involve customer to co-creation by persuade customers through publicity and promotions message (Prahalad 2004;Gebauer et al. 2010) i.e. customer take picture and write short message about them services experience and then published in own official website, Facebook or magazine.

b. Self Service.

Self Service is when customers want to purchase, buy or exchange resource without any interaction face to face with the provider (Meuter et al. 2000;Gebauer et al. 2010), i.e. Automatic Teller Machine (ATM), internet banking, online ticketing.

c. Customer Experience.

Customer experience is roughly how the provider contributes to customer learning through an accumulation of experiential encounters over the duration of a relationship between provider and client (Gebauer et al. 2010) i.e. low level error of internet accessibility.

d. Problem Solving

In self service it is important that customer to always monitored because another common criticism and problem occur during co-creation is quite high so the consequently, provide problem solving approach is needed (Alam 2006), i.e. online tutorial like youtube and F.A.Q

e. Co-Designing

Co-designing is customer work together with provider to create a new product or service that align base on customer want and needs (Prahalad 2004;Gebauer et al. 2010), i.e. competition of design logo or Graphical User Interface (GUI) in website by involving customers and others.

3. Successful Strategy Information Technology Adoption

The successfully of IT adoption in organization is influenced by a lot of factors most of the factors that influences such as Organization behaviour, top management, firm resource, typical of customer, supplier or IT consultant (Ghobakhloo et al. 2012). More detail, Ghobakhloo et al. (2012) stated with the theory of Framework of IT adoption influencing factor in organization. This theory divide in two; first, Internal factor such as Manager characteristic, organization behaviour, resource and IT user. Second, External factor such as IT product market, competitive pressure, external IT consultant, government. Other stated, according to Yang et al. (2005) about the foundation of developing and measuring the success of IT adoption which is called with Technology Adoption Model (TAM). TAM divide in two major determinants there are Information Quality (IQ) and Service Quality (SQ). IQ emphasize on the important of users perception on the quality of information presented such as Usefulness of content and adequacy of information. SQ emphasize on the important of users perception on the performance in technology retrieval and delivery such as Usability, Accessibility, Privacy and Interaction.

4. Service Innovation in SJ.AB.

SJ is a modern train services provider that offers the passenger always in efficient and as in the first that includes added environmental values to win with other competitors, and also gain the sustainability of its business (SJ.AB 2012). All the achievement of SJ is always consider keeping them passenger when choose SJ in safe, reliable and comfort travel. Moreover, not only as transportation SJ can be for work or relaxation but offers a number

of options for passenger in all various budget and encourage customers to obtain the train and to desire SJ in particular. Customer care is about how to enhance the level of experience of passenger before, during and after the journey with train of SJ.The focus is on the value co-creation with customer before, during and after travel with the competent and efficient approach it believe create a pleasant customer experience and also as differentiate factor to other competitors. Communication is the main ambition activities of SJ in the way of to get information as many people as possible. High quality technology believes will improve the coverage area by SJ for communication with many people and this is beneficial for the business future, according to always co-creating value with as many as possible people and customer. High quality technology not always related with "expensive thing" but rather than how organize effective and efficient that source. "Faster, clearer information and greater availability will enable us to raise the quality of our communication with customers" (SJ.AB 2012 pp.23). Keep updated information in the area of service business and how to acquire the information and communication has to be accessible for various groups is constantly stressed.

5. Summary of the theoretical framework.

The success IT adoption in service organization achieved by follow the service development according to Anders & Michael D (2003). The innovation process is gradually in stages started with Service Maintenance, Improve Service Performance until Service Innovation development. Every stage of the Service Development hierarchy must meet the dimension of the success of Technology Adoption Model (TAM) base on theory (Yang et al. 2005). Each dimension that mentioned in TAM created because it delivers a different value purpose for its customers. Furthermore, in order that value propose in every dimension at TAM acceptable, meet the customer expectation and need, so company must follow the process what called with Co-Creation value by Gebauer et al. (2010). Evaluation achieved internally or externally in organization according to the theory of Framework of IT adoption influencing factor by Ghobakhloo et al.(2012). The evaluation process will result of output as feedback or suggestion to improve the shortcoming and weakness when implemented in the market. All the cycle of the Success of IT adoption in Service organization (Figure 1) will run continuously keep abreast of market trend, and in accordance with the objectives and strategy of the company to win the competition.

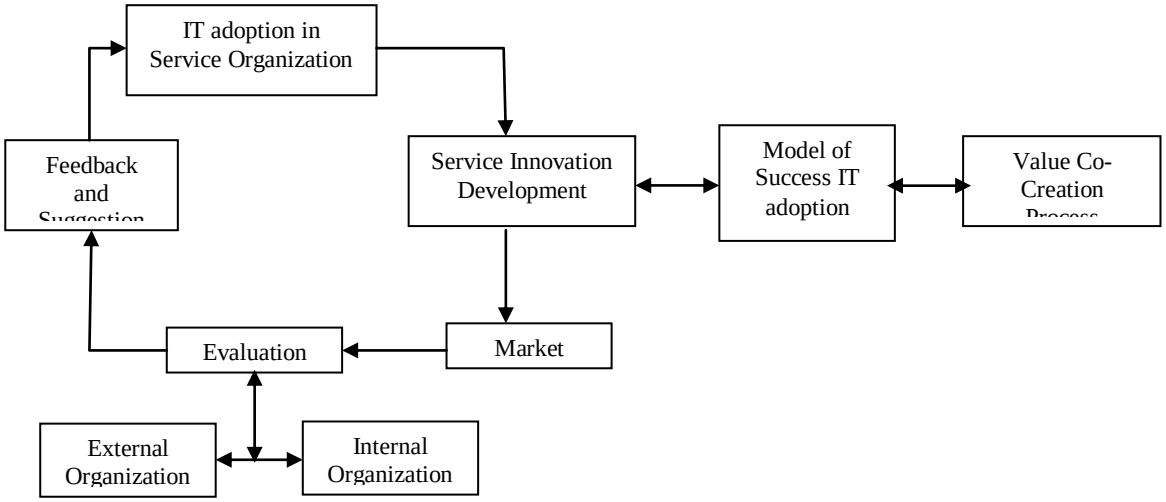


Figure 1: Success of IT Adoption in Service Organization

EMPIRICAL STUDY

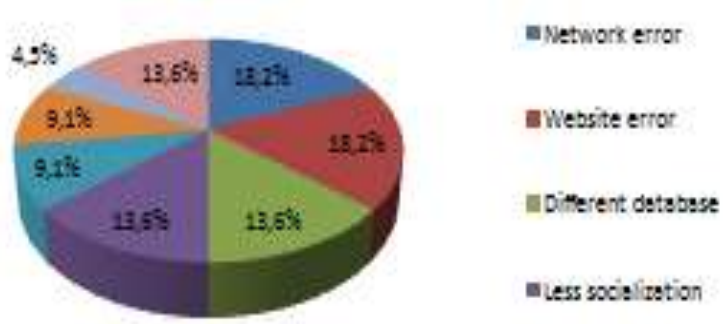
PT.KeretaApi Indonesia (Persero) formerly known as NaamloozeVenootschapSpoorwegNederlandschIndischeMaatschappij (NV.NISM) has undergone various changes and improvements as long as they operate more than 67 years in Indonesia. On August 17, 1945 Indonesian declare the independence day from the colonizer, then employees who are members of the "AngkatanMudaKeretaApi" (AMKA) took over from the colonizer. Since 2010 until now status of the railway company changed into PT KeretaApi Indonesia (Persero) or commonly called with PT.KAI. In accordance with the IT infrastructure, PT.KAI has so many development and improvement to support their business process such as Rail box and Rail card, External channel i.e. Indomaret, Alfamaret and Post Office, Internet reservation i.e. www.kereta-api.co.id and www.tiket.kereta-api.co.id, Drive thru.

Empirically study based on documentation related to online ticketing until now still found the "classic problem" such as the scarcity and hard to get ticket in peak season particularly in Eid Mubarak day season. Additionally, the issue of network and website error also continue emerged dominated problem in online ticketing in PT.KAI.

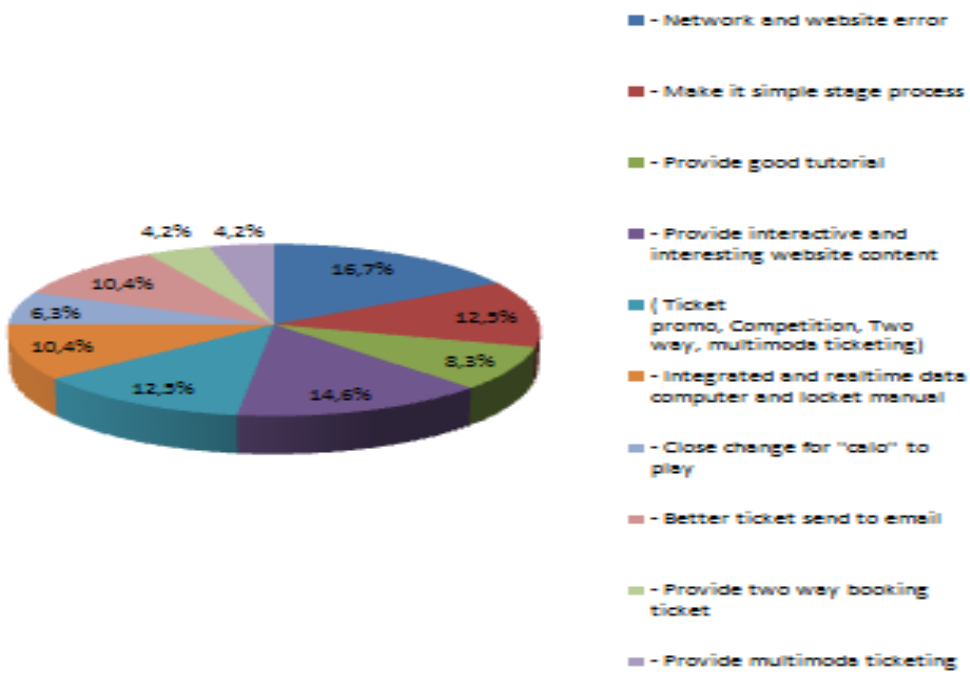
> "**Hunt Eid Trains Ticket, People confused by system Online" (Kompas 2014[2014/05/15]).**
> **"PT.KAI: Printed your ticket right now" (Kompas 2014[2014/05/12]).**
> **"Failed to get online ticketing, people prefer to long queue in locket station" (Detik 2014[2014/05/15]).**

The finding based on observations found that the most frequent problems that arise are dominated of network intrusions and a website error, ticket purchasing procedures are too long and less efficient – i.e. the exchange process from payment receipt to the ticket standard—and The administration fee per transaction online for a travel destination sometimes is burdensome for users who travel frequently and regularly every week or month. Perhaps it is not too burdensome for some passengers who rarely travel by train, but online transaction administration fee of Rp . 7.500, - it make sense for routinely user traveller can be very burdensome. No special facilities or discounts for this "special traveller" user's train, could be the cause why they prefer to buy train tickets at the station counters.

The topic question and discussion in interview and FGD collated base on theoretical framework. The question in Interview and topic discussion in FGD divide in two group First, question is about the general impression regarding providing of online ticketing and the last is the impression when interaction with online ticketing website.



The reasson why the level of people to participating in online ticketing is very low



General impression of passenger relating of interaction with online ticketing website

DISCUSSION

In the empirical data evidence based on documentation, participant observation, focus group discussion and interview there were emerge problem and obstacle in the implementation of TIS facilities specific online ticketing in PT.KAI. Therefore to understand the problem appear and to answer the question research relating with "How the perspective of Service Innovation driving in the implementation of TIS facilities in organization of services" and to understand "What should PT.KAI do to maintain and enhance the level of success in the implementation of TIS facilities specific online ticketing base on the perspective of Service Innovation" so this research propose about the theory of Success of IT adoption in Service Organization. Success of IT adoption in Service Organization is collaboration theory of Natural progression of the Service Development Hierarchy (Anders & Michael D 2003), value co-creation process (Gebauer et al. 2010), Success of Technology Adoption Model (Yang et al. 2005) and the last is the framework of IT adoption influencing factor in organization (Ghobakhloo et al. 2012). Furthermore, SJ.AB as national trains transport provider in Sweden has also as lesson learning who has history of success implementation IT specific online ticketing in Sweden.

Make a change in order to be applicable in the market successfully, requires a process and the steps being taken are structured. It also happens to SJ.AB as a national provider trains in Sweden. Success of SJ.AB as trains providers in Sweden change process takes approximately 20 years since 1988 and a process of evaluation and policy reform in 2008 (Ale et al. 2012). The SJ.Ab always emphasize how is the role of Information Technology to driving in the Service innovation in the organization (SJ.AB 2012). Building Technology Information System base on Service Innovation process is about long process of an invention of bringing good idea to extensive and effective use. According to the theory in Service development hierarchy (Anders & Michael D 2003) stated that

innovation in Service organization is like building block by follow the term of Service Maintenance, Service Improvement and Service Innovation. Every term of Service development hierarchy need to compete effectively and systematically to move to other hierarchy. Moreover, to move from one stage to upper in the context of Implementation of TIS facilities specific online ticketing organization should follow the theories of the Success of Technology Adoption Model (Yang et al. 2005) and creating value for customer by focus on how co-creation value process according on Gebauer et al. (2010). If both of the process has already completed and work properly, the next step is evaluation all the previous stage by follow in the theory of framework of IT adoption in influencing factor in organization according to Ghobakhloo et al. (2012). In summary, all process that mention before elaborated on the theory of Success of IT adoption in Service organization.

Expected to maintain and enhance the level of success in the implementation of TIS facilities specific online ticketing in PT.KAI is by follow the theory of Success IT adoption in Service Organization that consist of collaboration of four theory and SJ.AB as lesson learning. In this theory except follow the theory of Service Development hierarchy, Success of Technology Adoption Model, framework of IT adoption in influencing factor in organization when building of Technology Information facilities specific online ticketing. Furthermore, the main important thing is how always follow the service concept approach by focus on customer and value creation. This service concept approach align with the theory of value co-creation process by Ghobakhloo et al. (2012). In the service concept including through innovation of Technology Information System, customer is always as the key role in creator and co-creator of value proposition to the market. Market is always dynamic so in order to increase the market acceptance and success implemented in the field, engaging customer in every term of development process is key driver.

CONCLUSION

Service innovation through Technology and Information System (TIS) facilities specific of online ticketing TIS will success in public is required of good planning process and broad understanding of the Service Innovation perspective. An understanding of service science should always refer to the characteristic of service there are Intangible, Heterogeneity, Inseparability and Perishability (IHIP). Meanwhile, according to the Service Dominant Logic (SDL) perspective the development of a product or service should always insist on Intangible resources, value co-creation and relationship. In the study case of implementation TIS facilities specific of online ticketing in PT.KAI, this new perspective elaborated in the theory which called with the Success of IT adoption in Service Organization.

The theory of Success of IT adoption in Service organization is proposed for the managerial in PT.KAI on how to they planning and managing relating in the implementation of TIS facilities specific online ticketing to going well. The problem and the weakness that occur and found in the empirical data evidence, it is suggest for the manager in PT.KAI, that by follow and deep understanding the theory of Success of IT adoption in Service organization will solve their problem. Network and website error, not simple stages, not interactive and interesting website content that dominant found in the data empirical is probably one of the reasons why the online tickets are not so successful in the market. The main implication for the managerial in the theory of Success of IT adoption in Service organization is how they to always optimize their resource to follow on

the Service concept by emphasize on how to always engaging customer as creator or co-creator in every business propose by organization in the market.

Perform service innovation gradually by follow Service development hierarchy. Make sure the entire dimension in the Success of Technology Adoption Model is already fulfilled. Moreover, create value propose for customer by follow in the five step of value co-creation process –Customer engagement, Self Service, Customer experience, Problem solving, co-designing--. The step is not only stopping on that stage but all the achievement should be evaluating in external and internal organization aligns with the Framework of IT adoption-influencing factor in organization. The feedback and suggestion that emerge in the evaluation process and then repaired and maintain the performance, next, continue the cycle of success IT adoption in Service organization. If the stage is not going well, advised not to go up to the next level in the hierarchy of Service Development.

REFERENCE

Alam, I., 2006. Process of Customer Interaction in New Service Development.

Ale, G. et al., 2012. Th he Libera lization of o Railw ay Passe enger Tra ansport in n Sweden n – Outst tanding R Regulator ry Challe enges. *Center for Transport Studies Stockholm*.

Anders, G. & Michael D, J., 2003. *Competing in a Service Economy* First., San Fransisco: Jossey-Bass.

Atiks S, K., 2012. EVALUASI PENERAPAN LAYANAN TIKET KERETA API ON-LINE. *Journal Penelitian Badan Litbank Perhubungan*, 24(5), pp.412–422. Available at: http://www.scopus.com/inward/record.url?eid=2-s2.0-40649124590&partnerID=40&md5=1019e584ae4b07a5b97383f948fff878.

Detik, 2014. *Gagal-dapat-tiket-ka-online-ratusan-pembeli-sesaki-stasiun-senen.*, available at: http://news.detik.com/read/2014/05/15/154423/2583313/10/gagal-dapat-tiket-ka-online-ratusan-pembeli-sesaki-stasiun-senen[2014-05-15]

Edvardsson, B., 2005. Cocreating Customer Value Through Hyperreality in the Prepurchase Service Experience. *Journal of Service Research*, 8(2), pp.149–161.

Kompas, 2014,. KAI: *Cetak Tiket Sekarang Juga*., available at http://megapolitan.kompas.com/read/2014/05/12/1711228/KAI.Cetak.Tiket.Anda.Sekarang.Juga.[2014-05-12]

Kompas, 2014,. *Buru Tiket KA Lebaran Warga Bingung Dengan Sistem Online.*,available at: http://megapolitan.kompas.com/read/2014/05/15/1531567/Buru.Tiket.KA.Lebaran.Warga.Bingung.dengan.Sistem.Online[2014-05-15]

Gebauer, H., Johnson, M. & Enquist, B., 2010. Value co-creation as a determinant of success in public transport services: A study of the Swiss Federal Railway operator (SBB). *Managing Service Quality*, 20(6), pp.511–530.

Ghobakhloo, M. et al., 2012. Strategies for Successful Information Technology Adoption in Small and Medium-sized Enterprises. *Information*, 3(4), pp.36–67.

SJ.AB, 2012. *Sj annual report & sustainability report 2012*, Stockholm. Available at: http://www.sj.se/content/1/c6/17/36/19/SJ_ANNUAL_REPORT_2012.pdf.

Vargo, S.L. & Lusch, R.F., 2004. Evolving to a New Dominant Logic. , 68(January), pp.1–17.

Yang, Z. et al., 2005. Development and validation of an instrument to measure user perceived service quality of information presenting Web portals. *Information & Management*, 42(4), pp.575–589.