The User Engagement Impact along InformationTechnology of Infrastructure Library (ITIL) Adoption

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Abstract—**there are some issues with the adoption of information technology of infrastructure library (ITIL). The common issue comes from customers that always need excellent services. On the other hand, there are employees acting as an internal element of enterprise who need to be motivated while delivering the services. It has been known that the pressure at work and employees' personal problem can cause negative impacts such as decreasing the productivity and lack of teamwork. Moreover, IT managers have a limitation in understanding the psychological issues. Hence, it drives the enterprise to adopt an approach, which can help IT managers to motivate and reward the employees. They also need to ensure the employees that enterprise can be trusted, which means they should not be any doubt in helping the enterprise to reach the goals. Gamification is one of the persuasive approaches that have been used to boost motivation. In previous research, the design of user-centric ITIL function, which embedded gamification approach has been designed. But, the design still required evaluation in order to reveal the positive correlation between the user engagement and system success. This research focused on presenting the impact of user engagement towards successful ITIL adoption.**

Keywords--- Employees' motivation; Gamification; ITIL; user engagement; adoption.

1. INTRODUCTION

Nowadays, there are a lot of organizations adopting information technology (IT). It acts as a support and requirement to run the business and help the organization to achieve competitive advantages [1]. It is well-known that IT adoption is expensive, but the cost will not guarantee that the system will run properly all the time [2]. In other words, there will always be incidents and problem in using IT. Thus, to handle the unexpected event from happening, the organizations need to apply best practices.

The failure in using IT drives the organization to empower best practices to manage IT such as Information Technology Infrastructure (ITIL). ITIL is presented as documents, which act as best practices to adopt the IT service management (ITSM) [3]. It helps the organization to create and improve the mechanism of IT services delivery. ITIL has been used by the enterprises worldwide and from 2002, it is counted as the facto standard to improve the ITSM [4]

Along the adoption of ITIL, there is a challenge in engaging with the people who use it. ITIL just provides how to deliver the IT services, how to align IT to organizations' strategy, how to design a good IT service, etc. Unfortunately, ITIL does not provide a clear way of how to engage people who are involved [5] [6]. In fact, according to previous research, there is a positive correlation between ITIL adoption and user engagement [7]. Therefore, enterprises that adopt ITIL need to adopt other approaches to complete the ITIL.

In the previous research, game-like service desk function has been designed [3]. This system ensures the involvement of manager and supervisor as the top management. Meanwhile, this research is focused on discovering more evidence that the user engagement is positively related to successful ITIL adoption by using our design.

II. LITERATURE REVIEW

This part represents the theories that supported this research. It includes ITIL, gamification, and user engagement theory.

A. Information Technology Infrastructure Library

Information Technology Infrastructure Library as stated by [8]is represented as the best practices to manage the adoption of IT service management, which is widely used by the organizations worldwide [9]. It focused on processes and how the processes work together to bring excellent IT services for enterprise system. Therefore, it is called as best practices, which support planning, monitoring, and controlling IT Services [10].

ITIL gives a clear picture of IT management and IT operations such as incident management, problem management, change management, configuration management, and availability management. The latest version of ITIL is ITIL 3.0, which has been published in 2007 by Office of Government (OGC). It contains 5 phases

of service lifecycle [11]. Below are the phases of ITIL lifecycle:

1) Service strategy
2) Service design
3) Service transition
4) Service operation
5) Continualservice improvement

B. User Engagement Scale

User engagement is defined as the quality of the user experience that emphasizes the positive aspects of the interaction. It is the reflection of enjoyment while doing something [12]. In daily life, all people know that when someone plays a video game, they will be drowned to the system, which means they are willingly spending their time. Hence, user engagement is not just about usability, it is also about how users invest time, attention, and emotion when they are connected to the system [13]. The idea of game-based ITIL services is bringing the way people playing game to the workplace. By adding the game element to ITIL processes, enterprises can create a friendly and fun workplace.

According to the previous research, user engagement attributes are focused attention, aesthetic, novelty, perceived usability, endurability, felt involvement [14]. By using the user engagement scale (UES), we can get the score of each attribute. Meanwhile, the accumulation of every score represents the level of user engagement. But, by using this scale, we are also able to define the result as the score of each attribute, in order to simply identify which attribute is being a focus of the evaluation [15].

C. Empowering Gamification

Gamification is defined as the use of game element design in non-game context [16]. The adoption of gamification aims to motivate users and facilitate a win-win solution for enterprise and employees [17]. It means that the enterprises can reach the goals and employees are rewarded. Gamification has been widely used to motivate system users such as students, and customers in order to help the organizations reach the goals. In the internal level of organizations, it is used to help the manager motivate their employees.

A manager includes IT manager has to give more attention to the staff's personal issue, as it can decrease the productivity. But, most of manager IT for example, service desk manager cannot handle this issue due to the lack of psychology knowledge [18].

In 2025, staffs will be transformed to millennial staffs, which mean they will be more active, optimist, success-driven, independent, and technology consumer [18]. This reason drives the organization to attach new approaches in order to help managers in motivating their staffs.

Gamification is able to accommodate the needs of millennial. Moreover, it drives the challenge, use technology, and the tasks are clearly defined [4]. It also supports managers to create new challenging workplace. They are also able to reward the employees for every finished task.

Our previous research discussed to design the game-based service desk [5]. Eventually, more evidence were needed to show that there is a positive correlation between user engagement level and successful ITIL adoption. Our previous research has proved that the level of service desk quality increased as the level of user engagement is also increased. This is actually the basic evidence that by ensuring a higher level of user engagement, the organization will successfully adopt the ITIL. Unfortunately, there was limitation of data, thus, the study could not enrich the evidence of correlation between successful ITIL adoption and higher level of user engagement. Hence, this paper provides another evidence that along the adoption of ITIL, user engagement is obviously required to ensure the success of ITIL adoption.

2.4 The Game-Like Service Desk Function

In the previous research, a design of game-based service desk has been released [3]. As we can see in Figure 1, the person involves is an analyst, supervisor, and manager. This design name is ELROND, where the game -like mechanism starts when the system receives the report that the service has been received and meet the service level agreement (SLA) as we can see in Figure 2. In this system, the main features are starting the service, closing the service delivery, presenting the score, and rewarding the analyst who provides IT service.
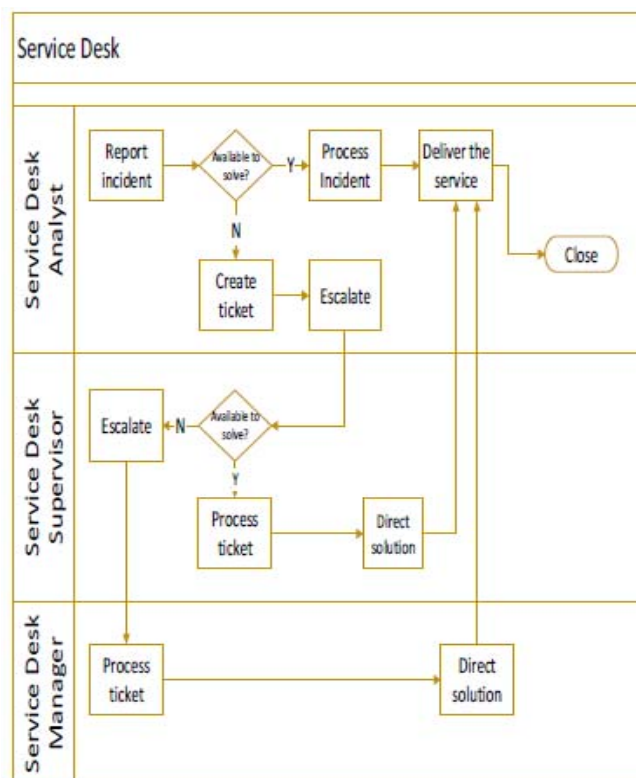

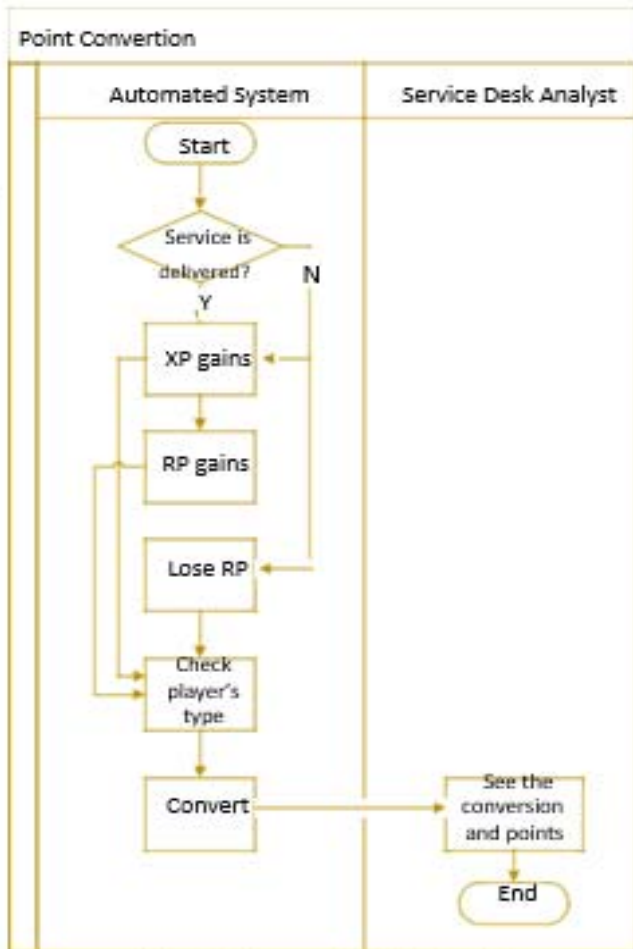Fig.1. ELROND Incident Management [3]

Fig. 2. Conversion of Points [3]

III. FINDING THE EVIDENCE

To find the evidence, we have tested the game-like service desk in two other organizations. The first organization, which is named X Corporation becomes the only one IT service provider for organization that provides electricity in Indonesia. Moreover, we also tested the system in Y Corporation. It is one of organization which runs cement industry in Indonesia.

3.1 Case Study: X Corporation

The service desk of X Corporation is full of millennials and young employees. Subjects aged between 25-40 years old, who are all active in using the gadget and social media. At the first time we introduced the system, they were all passionate to try it. They perceive that they will get more incentives by doing the tasks. According to the interview with the service desk analyst, they have good productivity and they expect to be rewarded. We also interviewed the IT manager that adopt service desk, the most challenging situation is when they need to fix the incident on time and the reported incident is often not being recorded especially when user reports the problem face-to-face.

Our design is tested in May 2nd, 2016, and May 4th, 2016. Meanwhile, we have spread UES to users of current service desk in November 11th, 2015. According to the result, it shows that the current user engagement is 4987, while the

game-based service desk user engagement is 8141, which means the gap between current and game-based service desk is 3154. In Table 1, we can see the result evidence that the time response increases as the level of user engagement are boosted.

Table 1. Time Response Comparison of X Corporation

Applications	Incident	Level	Time response
Non Game-Based Service Desk	Incident A	Medium	20 minutes
	Incident B	Low	18 minutes
ELROND	Incident A	Medium	5 minutes
	Incident B	Low	10 minutes

3.2 Case Study: Y Corporation

According to the interview with service desk manager in Y Corporation, the most challenging experience in adopting service desk is how to deliver high quality of service on time. The problem is placed at human factor, which means they need to be motivated and gain new experiences. The manager claimed that there are no clear rules about rewarding the employees who have good productivity. In Table 2, we can see that the result of comparison between a system, which includes gamification and non-game system. This application is tested on May 2nd, 2016 until May 5th, 2016. Along the testing process, we discovered the level of user engagement of service desk staff towards their system and our design. By spreading UES, which is filled by 10 respondents, the current level of user engagement is 60.79. Moreover, we also revealed the level of user engagement of our design. The gap between the current level and our design is 22.01 points, which means the user engagement of our design is 82.80.

Table 2. Time Response Comparison of Y Corporation

Applications	Incident	Level	Time response
Non Game-Based Service Desk	Incident A	Medium	20 minutes
	Incident B	Low	18 minutes
	Incident C	Medium	18 minutes
	Incident D	Medium	12 minutes
ELROND	Incident A	Medium	5 minutes
	Incident B	Low	10 minutes
	Incident C	Medium	8 minutes
	Incident D	Medium	8 minutes

This evaluation shows that ELROND drives higher productivity of people who involve in service desk function. It happens because ELROND adopts clear rules that motivate service desk staffs to respond to the incident based on SLA. Unfortunately, ELROND is not able to reduce the required time of technical incident handling such as decreasing the time of resetting server, installing required software, etc. Nevertheless, it can motivate staff in responding to the incident quickly. When an incident is responded after the agreed time, the incident ticket is failed and the system will automatically point it. In contrary, if the service is delivered based on SLA, the service desk will get job satisfaction and reward. It proves that gamification, which is applied as persuasive approach can boost motivation, conformance, and productivity.

IV. CONCLUSION

All system users must engage with the adopted system including employees of service desk as system users because they are responsible for communicating with end users in order to help end users fix get agreed services based on SLA. When the service desk analysts cannot be engaged to the system, quality of service desk is affected making the response becomes slow in incident handling.

We have proved that by adding persuasive approaches such as adding game elements along service desk adoption, user engagement and service desk quality, the result positively increased.

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