The Effects of Enjoyment on an Enterprise Information System
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Abstract. It is time to consider enjoyment factor into enterprise information system (EIS) as young man getting used to always fun from Facebook, iPhone. This study integrated enjoyment into EIS success model of DeLone and Mclean. The study result showed that enjoyment plays a key role to EIS success model through its impact to user’s satisfaction and continuous intention. This study made contribution to academy as well as IT industry. The suggestions derived from study result also conducted.

1. Introduction

A new concept of always-fun is emerging from Facebook, ipod, iphone, ipad to draw new young generation to stick IT website or devices [1,2]. Facebook, Blogs and other web 2.0 websites feature their interfaces with interesting and vivid colors to draw consumers to enjoy the system, this trend is introducing to enterprise information system (EIS) to be enjoyable [2,3]. As consumers get used to these Facebooks likes with great playfulness and enjoyment [4], organization acknowledge the IT trend and requiring EIS to be as colorful and interesting as consumer IT [1].

Enjoyment is a profit driver for company. Company can gains business performances out from its’ happy and enjoyed employee. Seattle Pike Place Fish Market fills with harmonic melody and happy flying fishes, the enjoyment in the workplace allowed the happy fish market to earn its fame and big money of US$5,000,000 [5].

The company’s profit and success are originated from happy employee works that enjoy their job. A manager enjoying his work can performs jobs better than un-enjoyed; the enjoyment then leads to better job performances [6]. That is, the enjoyment produces high job performances, and then, ultimately contribute to company profit and success [6,7].

While enjoyment has been identified as a key factor to job performance and spurred company’s profit and success, as well as the new hot trendy of the enterprise information system (EIS), the study of enjoyment effect on EIS has been left untouched. EIS success or adoption researches commonly focused on usefulness, satisfaction [3,8], and intention to continue use [3], however, less researcher focus on enjoyment.

While EIS success model is hot in academy research field, one of the most popular success models was proposed by DeLone and Mclean at 1992, illustrates how to get the success of EIS. DeLone and Mclean 1992 reported company gain EIS success benefit through users’ intention to continue use the EIS. User willing to continue with the EIS if they are satisfied and perceived the system is helpful to their job performance [9]. As there is some antecedent factors remained in the EIS model [10]. This study was inspired and trying to figure out if enjoyment can contribute to EIS success though end-users’ intention to continuous with the system.

The research results showed that enjoyment indeed significantly impact users’ intention to continuous with the EIS satisfaction. The more enjoyment with the system the more satisfaction was received. On the other words, affecting user satisfaction with the system is enjoyment itself rather system functions.

The rest of this study is organized into four sections. Section Two provides a literature review of research concepts of enjoyment, satisfaction and Expectation Confirmation Theory (ECT) in previous research. Section Three presents the research methodology proposing research model and
2. Theoretical Background

2.1 The effects of enjoyment

The enjoyment leads to the higher performance. A worker with enjoyment has the higher capacity to handle job better which end up with more successful than an un-enjoy worker does [7]. Fisher (2003) reported that workers enjoy the moments of works are more productive than the less enjoying; employees who are enjoyed with their jobs have better performance on the job. That is, organization received business performances from employees from workers who enjoying their job. Hence, worldwide big companies take enjoyment as one of their competitive edges.

Enjoyment is the key factor impacts consumer IT system acceptance as in World Wide Web, e-commerce, gaming. Enjoyment in World-Wide-Web browsing decides users’ intention to continue use of WWW technology [11]. Enjoyment in WWW predicts users’ continuous intention with it [12].

2.2 Enjoyment in IT and enterprise system research

Enjoyment is one of a key factors impacts computer system acceptance. Enjoyment was defined as the activity of using the computer is perceived to be enjoyable in its own right, apart from any anticipated performance consequence [13]. Davis et al. (1992) revealed that enjoyment is one of key factors impact intentions to use personal computers of wording processing and presentation program. An experimented study on Finland’s business managers with microcomputer system, the enjoyment is one of key factors directly impacted the usage of microcomputer system [14]. After 1994 Igbaria et al. re-sampled North American chief executive officers (CEO) and reported enjoyment significantly positive impact the usage of microcomputer system [15].

Most studies in the success model of enterprise system praise utilitarian features. However, there has been little discussion about mental enjoyment. A fitly customizing and configuring ERP functionalities are the two of critical success factors for ERP implementation [16]. A experimented in IBM email system and graphic system, the perceived usefulness and perceived ease of use were the two factors decided user acceptance [17]. Functional features of perceived usefulness and perceived ease of use are the only two factors for ERP system [8,18]. As ERP are consistently expanding by adding new functionality, it could be easier to adopting new function if they are interesting and easy to learn.

Increase the functionality and features of deployed systems can be costly, and sometimes is equal to re-implementing ERP systems. The financial and political costs of re-implementation make this option unattractive to managers. Besides the utilitarianism of imposing instrumentalities and functionalities of systems, the present study propose an alternative less costly, solution to this issue.

Research enjoyment in enterprise system is important while ERP system may works as a globalization tool that link branches spread worldwide into a cohesive virtual working platform. More and more leading companies, implementing and enhancing the enjoyment as the competition becomes intense and the degree of globalization of companies gets higher. It is vital to research on the enjoyment of ERP, so as to increase employee’s satisfaction, productivity and continuous intention. Especially with the advocacy of environmental protection awareness, the enjoyment of the ERP system can reduce the carbon emissions from frequent employee traveling between spread branches. As well as increase the competitive strength of companies from stimulating continue usage of the system which makes it a significant research.

3. Research Model

3.1 Enjoyment

Teo, Lim and Lai (1999) undertook a research on the state of internet usage and found that the
perceived enjoyment, usefulness and ease of internet use are the determinants of the future internet usage[19]. Internet users with more enjoyment will surf on the internet more frequently and spend more time on it, which infers that perceived enjoyment has a positive effect on the frequency of internet use. Lin, Wu and Tsai [12] studied web portals of Yahoo and Yam, the results showed that perceived usefulness and enjoyment have an obviously positive effect on intention to continue. Ha,

On non-recreational IS research also found that enjoyment had a positive effect on the user’s intention to continue. In a micro-computers study, Igbaria et al reported that enjoyment had a positive effect on the intention to continue of users [14]. The more enjoyments are the more information system usages. With previous research above, enjoyment is employee in this research in a work-oriented ERP information system. The research hypothesis the intention to continue of the ERP system as follows a:

H1: perceived enjoyment positively impact intention to continue

3.2 User satisfaction

The concept of satisfaction is widely applied in measuring the success and effectiveness of IT systems [9,20]. Some mainstream scholars have conceptualized satisfaction as an affect toward an object, other main-stream scholars have adopted satisfaction as a term representing utilitarian judgments of an object [21], and some research measures satisfaction by combining affect toward and utilitarian judgment of objects. Although researchers evaluate satisfaction in a variety of ways, satisfaction always leads to intention to continue [22]. Enjoyment directly impact user’s satisfaction while they do the shopping on line, the more they are enjoying on browsing the website the more satisfaction they got. This study takes the concepts and hypothesis as:

H2: enjoyment positively impact user satisfaction

3.3 Intention to continue

Intention to continue is another key shared construct in popular theories about successfully adopting IT, and indicates the success of the IT system [17]. Intention to continue means the intention of the user to continue using a particular system. The concept of intention to continue is taken from current popular IT adoption success research, and this study understands the concept of intention to continue as predicting IT success.

Oliver (1980) revealed that when the performances of a product surpass the expectation, consumers will positive confirm the expectation, feel the products is useful and be satisfied by the products. Eventually, consumers with more satisfaction will have higher repurchase intention [17,22]. Bhattacherjee holds that the repurchase intention of consumers is similar to the continuance intention of users of information system and extended Oliver’s satisfaction with information system. Therefore, Bhattacherjee supposed that users with more satisfaction will have higher continuance intention [23].

H3: user satisfaction positively impact intention to continue

This study adopts the definition and measurements of the continuous intention construct from Moon and Kim [11], who measured users’ intention to continue use of the Internet. According to the statement and research hypothesis above, the operationalized definition of variables and measurement items are shown below Table 1.
Table 1. Operational definitions and measurement items.

<table>
<thead>
<tr>
<th>Perceived Enjoyment</th>
<th>Referring to the performance of an activity for no apparent reinforcement other than the process of performing the activity.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Using the EIS in my job is pleasant.</td>
</tr>
<tr>
<td></td>
<td>2. Using the EIS in my job is positive.</td>
</tr>
<tr>
<td></td>
<td>3. Using the EIS in my job is interesting.</td>
</tr>
</tbody>
</table>

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<tr>
<th>Satisfaction</th>
<th>User satisfaction is conceptualized as the attitude toward an EIS of someone who interacts with the application directly.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Does the system provide sufficient information?</td>
</tr>
<tr>
<td></td>
<td>2. Is the system accurate?</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Intention to continue</th>
<th>Continuing intention to use an EIS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I will use this EIS on a regular basis in the future.</td>
</tr>
<tr>
<td>2.</td>
<td>I will frequently use this EIS in the future.</td>
</tr>
<tr>
<td>3.</td>
<td>I will strongly recommend that others use this EIS.</td>
</tr>
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4. Data Analysis

4.1 Data collection

The sample population in this study consisted of ERP end-users working, for Chinese and Taiwanese companies that adopted the ERP systems of SAP, Oracle, and Data Systems. These three software companies are the world’s leading brand, the second brand, and Taiwan’s leading brand, respectively.

4.2 Structure model analysis

This study uses AMOS 17.0 software to perform structure model analysis. Hair et al. [24] noted that a good structure model should have goodness-of-fit of absolute, incremental, and parsimonious fit measures. Table 3 shows that all the result values in this study exceed values proposed by scholars.

Table 2. Structure model goodness-of-fit analysis.

<table>
<thead>
<tr>
<th>Goodness-of-fit</th>
<th>Proposed value</th>
<th>Scholar proposing</th>
<th>This paper</th>
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<tbody>
<tr>
<td>Absolute fit</td>
<td>$\chi^2$</td>
<td>--</td>
<td>99.57</td>
</tr>
<tr>
<td></td>
<td>d.f.</td>
<td>--</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>GFI</td>
<td>&gt;0.9</td>
<td>[25 2000]</td>
</tr>
<tr>
<td></td>
<td>AGFI</td>
<td>&gt;0.8</td>
<td>0.939</td>
</tr>
<tr>
<td></td>
<td>NFI</td>
<td>&gt;0.9</td>
<td>[26]</td>
</tr>
<tr>
<td>Incremental fit</td>
<td>IFI</td>
<td>&gt;0.9</td>
<td>[26]</td>
</tr>
<tr>
<td></td>
<td>CFI</td>
<td>&gt;0.9</td>
<td>0.961</td>
</tr>
</tbody>
</table>

4.3 Research model analysis

![Research result of enjoyment effects.](image)
Structural equation modeling (SEM) with AMOS 17.0 software was performed to test the study’s model. Figure 2 illustrates the research model in this study, and presents the correlations between enjoyment, satisfaction, and continuous intention.

The statistic shows that enjoyment and user satisfaction all have a remarkable influence on continuous intention. The path coefficient from enjoyment to the continuous intention was 0.59, with a t value of 11.57, which is significant at the P < 0.001 level. These results support hypothesis H1. The path coefficient from enjoyment to user’s satisfaction of the enterprise information system (EIS) was 0.58, with a t value of 11.19, which is significant at the P < 0.001 level. The result supports hypothesis H2. The path coefficient from user’s satisfaction to the continuous intention was 0.34, with a t value of 6.99, which is significant at the P < 0.001 level. These results support hypothesis H3.

Enjoyment is the best predictor variable and explanatory variable with a total effect of 0.59), better than user satisfaction which was 0.34. The study results support Davis et al. 1992 that enjoyment has a positive effect on continuous intention (CI). Research result also supported Bhattacherjee’s theory of user’s satisfaction have a positive effect on CI. This research done on a larger scale, the study results prove perceived enjoyment (PE) to be a variable with more influence, it is a better predictor variable for CI. As to whether perceived enjoyment (PE) has an effect on the CI of ERP users, the research proves that PE does have a great influence.

An assumption made in this research was that user satisfaction is determined by enjoyment. The study results support Ryan’s theory: the intrinsic perceived enjoyment has an effect on people’s perception of satisfaction, i.e. when a system makes users feel relaxed and they derive pleasure from using it, the users will have a higher satisfaction and willing to continuous to use the system.

5. Conclusion

Introducing the ERP system entails substantial costs in human resource, material resource and financial resource, which makes both senior managers and previous researchers focus more on the usefulness and the performance of the system, but ignore the enterprise virtual environment supported by ERP in which employees all over the world spend much time on. The study results show that, it is perceived enjoyment has a high positive correlation with CI. It suggests that the users in an enterprise focus more on whether an IS can help them find pleasure in work. Perceived enjoyment has a significant influence on an individual’s CI of the information system which supports the virtual environment of companies. Perceived enjoyment is the main determinant of the CI of ERP users. Consequently, ERP should not only be designed for work but also provide a work place in which users can feel relaxed and derive pleasure from its use. PE should be taken into consideration when developing the software programs of ERP, the function of which was emphasized in the past. It is necessary to create an environment where people can derive pleasure from, since it is only through this that the CI can be increased and the system can be utilized in an ideal level.

The study results suggests that, companies who use the ERP application should add some relaxing features in the system design: multimedia should be added, such as personalized mood templates, preset audios, inspiring interactive animation, linkage with the company mailbox. All these above will offer the users an audio-visual feast that will make them enjoy the use of the said application. Otherwise, the function of real time messaging can be embedded in the ERP system, which can make it convenient for users in different places to communicate and learn from each other as they like. Only with these could the satisfaction and CI of users be increased. Besides, with the increase in enjoyment of the enterprise’s virtual environment supported by the ERP system, the carbon emissions in business commuting can be reduced, green resources can be protected, and the competitive strength of an enterprise can be improved.

Perceived enjoyment is remarkably correlated with satisfaction. The study results support Ryan’s theory that PE has an effect on personal satisfaction, which implies that the supplier of the ERP software should not only encourage innovation but also satisfy the users psychologically. An individual’s PE is the index of the usefulness of the system, since it can affect the users’ perception
of the system’s usefulness. To some extent, if the software developer lacks material and human resources, PE should be prioritized over the function of system. Multimedia and interactive elements should be added into the design, such as frame and sound options, visual treats such as animation, linkage with the company mailbox and real time messaging. If the ERP system software has all these above, users will definitely be delighted in using it which consequently leads to them purchasing it. The indirect effect of perceived enjoyment on continuous intention through satisfaction shows that, when the system is enjoyable, the users will be satisfied by the system and thus continue to use it. It can be inferred that the large ERP system can incorporate a personalized interface to attract users and improve the efficiency of the ERP system with higher enjoyment benefits.

6. Research Limitation and Future Work

Regarding the limitation of this research, most of the completed questionnaires collected were limited to SAP, Oracle and DSC (Taiwan) employees and relatively few from other companies in Taiwan. Furthermore, the large enterprises in Taiwan that have introduced the ERP system are mostly enterprises engaged in electronics, thus the research objects were mostly limited to this field. Besides, the research objects were all enterprises that have introduced the ERP system for 1 to 3 years, which makes this research a longitudinal study and unable to launch a long-term study of the changes in the variables.

A cross-industry research can be done in the future based on this research in order to verify whether the users of the ERP system need an operating system which can provide users with features that give them enjoyment and pleasure.

Enjoyment is simply enjoying the system apart from performance concerned. Davis et al. (1992) defined enjoyment is the degree of pleasure perceived in its own right throughout the process, apart from any performance consequences that may be anticipated.

As the Enterprise Resource Planning (ERP) system is the prime instrumental system in corporate workplace, this study employed ERP system users as a sampling.

Such as employs multi-media audio atoms into daily operational functions by providing interactive animations with the gradient tasks. Warm animating reminders send to next stage co-workers, handy hyperlinks to email box, customizable functional integrations of relative functions for handy use. Provide instant message or Twitter like function within ERP system enable users to communicate instantly while they are operating. Simply put, through enjoying in ERP system make users feel the system is helpful and receive satisfaction from system.

References


