



User Resistance in Information System Implementation: A Review of Related Literature

Ferdinand V. Dalisay fvdalisay@psu.edu.ph Pangasinan State University

Abstract- The identified salient reason for most of Information System (IS) implementation to fail is user resistance. User resistance has long been acknowledged as a critical issue during the implementation of an Information System (IS). Many research papers have discussed the reasons for user resistance; however, few papers review the implementers' responses. This paper reviews the reasons why users resist in the implementation of an Information System. In addition, this paper will also discuss different responses of the information system implementers when there is user resistance.

Keywords: user resistance, information system implementation

1 INTRODUCTION

Since industries and organizations start to evolve their processes from manual labor too operatordependent machines, semi-automated machines, automated machines, and artificial intelligence (AI) – enabled robots, user resistance already exists. In the early years of 19th century, brought the fundamental industrialization changes on how business processes work [1]. The use of machinery made factory owners face resistance from its workers. This resistance is shown through manifested criticism, strikes, vandalism and under-utilization [2]. In the 20th century, information technology (IT), again, changed the way business operate. With the use of computers, production lines are now equipped with semi-automated up to automated machines. However, these changes are not immune from user resistance. Business or functional managers and IT professionals have often faced user resistance to IT innovations. IT innovations include: (1) electronic data-processing equipment [3], management information systems [4], decision support systems [5], clinical information systems [6], enterprise systems [7] and others [8].

Despite the advantages associated to these information systems, their adoption is often problematic. For example, in the implementation enterprise resource planning (ERP), approximately 50% of its implementation fail to meet the organization's expectations [9]. According to DA Consulting Group, one of the major reasons why some SAP implementations fail to achieve its desired goals is because many companies "fail to address the user side of the equation" [9]. The study of Al-Mashari [10] identified end-user resistance as one of the main contributing factors towards the failure of ERP implementation. User resistance is an issue that could result in problems for organizations. People working in the organization are its major stakeholders, without their support to the new system being implemented, it will not work smoothly. Organizations often spend money and time to prepare for the early stages of project implementation because complexities. However, less effort can be seen in post-implementation of ERP systems. This is a problem described by J. Henry [11] in his study stating "one of the commonly cited reasons for



Asian Journal of Multidisciplinary Studies Vol. 1, No. 3, Special Issue(2018) ISSN 2651-6691 (Print) ISSN 2651-6705 (Online)

ERP failures is end users reluctance to use the newly implemented ERP ". When less effort is given on post-implementation of a new information system, the atmosphere will start to get worse and the project management team is confronted with complaining employees once they start using the system.

The connection between user adoption and successful information system implementation has been increasingly a topic of interest to researchers, business managers and IT project teams. In response to a growing awareness that system users are not homogeneous in their approach to adoption, and that user resistance exists, researchers began to explore the reasons for user resistance. This paper aims to explore the existing reasons why users resist, how IT project teams react to user resistance and how to solve user resistance.

This paper is outlined as follows: section 2 defines user resistance, section 3 discusses the methodology, section 4 discusses the result of literature review and section 5 concludes the paper.

2 USER RESISTANCE

User resistance in IS research has been conceptualized as an adverse reaction [12] or the opposition of users to perceived change related to a new IS implementation [13]. Another study [14] defined user resistance as opposition of a user to change associated with a new IS implementation. Research investigating resistance behavior defines resistance as an "opposition, challenge or disruption to process or initiatives".

User resistance was further connected to external or internal influences resulting from expected efficacy and outcomes and directed towards the new technology [15]. While technology affords new opportunities, resistance behaviors tend to disrupt work practices by surfacing

organizational contradictions, which in most cases call for resolutions [16]. If not addressed during the early stages of manifestation, resistance could progress to trigger forces that cause dysfunctionalities in organizations. It is therefore imperative to explore specific reasons for resistance in order to suggest practical recommendations.

It is worth noting however, that user resistance behavior can be classified into two different forms: negative resistance as the rationale for opposing or deceiving [17] and positive resistance as the rationale for supporting or improving [18].

This paper will focus in the negative side of why people resist a new information system implementation.

3 METHODOLOGY

This paper uses a review of related literature to explore published journals and literatures regarding the existing reasons why users resist, how IT project teams react to user resistance and how to solve user resistance. The following are the steps undertaken in doing the literature review:

3.1 General database search

Related keywords were used for a general database search. The keywords are: "user resistance" and "information system implementation. The keywords listed above were used in the academic database ACM Digital Library. The search result from the general database search will be initially filtered by the publishing year. All journal articles and papers published from 2012 up to present will be included in the initial list of literatures to be reviewed.



Asian Journal of Multidisciplinary Studies Vol. 1, No. 3, Special Issue(2018) ISSN 2651-6691 (Print) ISSN 2651-6705 (Online)

Search Query	No. of Search Results	
	(ACM Digital Library)	
User resistance in information system implementation	166,304	

3.2 Filtering and Analysis of the Results

The initial list of literatures will be reviewed according to its relevance to the research topic. Reading all of the papers and research articles from the results of a general database search can be a very tedious task and may not be feasible because of time constraints. Thus, it was determined that reading the abstract and conclusion is a more realistic approach in filtering the results.

After reading the abstract and conclusion of the researches and literatures from the filtered list, it must also be evaluated according to its relevance to the main research question of this paper: what are the existing application of VR and AR in prototyping?

4 RESULTS AND DISCUSSION

4.1 Results of general database search

Table 1 shows the initial search results for each of the three search queries formulated.

Table 1: Number of search results per query

Search Query	No. of Search Results	
	(ACM Digital Library)	
User resistance in information system implementation	451,268	

To further narrow down the number of search results, it has been filtered by publication year. Table 2 shows the number of search results after filtering by publication date.

Table 2: Number of search results per query

4.2 Results of Filtering and Analysis of the Results

The number of search results from the previous query is still too many to be reviewed. Therefore, a direct match of the keywords to the paper title has been done to furtherly filter the results. Table 3 shows the number of search results after filtering.

Table 3: Number of search results per query

Search Query	No. of Search Results	
	(ACM Digital Library)	
User resistance in information system implementation	14	

The abstract and conclusion of the 14 journal articles were read. Only six (6) articles were selected to become the pilot studies of this study. Table 4 shows the selected pilot studies to be reviewed.

Table 4: Number of search results per query

Research Title	Publication Year
Lecturer resistance during	g 2017
ICTs implementation in higher	r



Asian Journal of Multidisciplinary Studies Vol. 1, No. 3, Special Issue(2018) ISSN 2651-6691 (Print) ISSN 2651-6705 (Online)

education in Zimbabwe: forms and triggers [19]	
Why Do People Reject Technologies: A Review of User Resistance Theories [21]	2012
Information technology implementers' responses to user resistance: nature and effects [22]	2012
User Resistance Factors in Post ERP Implementation [23]	2013
Why are they grumbling about my new system? Theoretical foundation and empirical evidence of employee grumbling as a user resistance behaviour [24]	2014
Organizational Resistance to E-Invoicing – Results from an Empirical Investigation among SMEs [25]	2013

4 RESULTS AND DISCUSSION

Several study denotes that user resistance can have both negative and positive effects. When it produces struggle and expends time and resources, resistance is useless and can even be ruinous. It can never affect the organization positively if user resistance keeps expanding pressure, turnover time or decreasing performance. It is therefore important to know the reasons why people resist for the organization to formulate solutions for it.

The study of Laumer et. Al. [21], focused on power and politics as factors affecting user resistance in information system implementation. The study explained that resistance in terms of the

system being implemented and the context of use. Employees will be inclined to use a system if they believe it will support their position of power. If they think it might cause a loss of power to them, they will resist. User resistance results from the interaction of system features with the intraorganizational distribution of power. If users perceive that the system implies a loss of power, they will most likely to resist. More importantly, the strength of resistance will be based to the size of power loss and its perceived importance. They also noted that the politics is also a factor for user resistance. Resistance change and implementation difficulties primarily, in terms of the conflict among users, resulted from perceived increase in power. She notes that the political perspective appears to be primarily applicable for systems cutting across multiple user departments.

The study of Salih, et. Al. [23] discussed 8 factors that lead to user resistance. These factors are: (1) lack of user education and training, (2) change in job content, (3) lack of communication between top-management and end users, (4) lack of user involvement in the development process, (5) usability issues and resistance to technology, (6) user expectations, (7) increased efforts and (8) resistance due to change.

However, in the study conducted by Laumer, et. Al. [24], generalized the 8 factors above to two drivers of employee resistance. (1) Perceptions of the new information system – this perception indicates that the understanding of conversations during implementations is critical for the information system's success. (2) Perceptions of the IS implementation induced changes – people resist because they believe that IS in organizations induce changes in organizational elements such as routines, processes, and structure.

The study of Rivard, et. Al. [22] focused on the information system implementer's responses to



user resistance. The researchers conducted a case survey. Their case database includes 89 cases with a total of 137 episodes of user resistance. They have categorized implementer's responses according to the following: (1) inaction (e.g. doing nothing, not caring, feeling unable to do anything), (2) acknowledgement (e.g. discussing issues, administering a questionnaire, organizing round tables, a task force, or focus group), (3) rectification (e.g. redesigning the system, training, changing work schedule) and (3) dissuasion (e.g. forcing the use of the system using coercive power or threatening users, reprimanding users or mandating reassurance, top management support, benefit rationalization). The result of the study is as inaction follows: (1) 38.0%. (2) acknowledgement - 3.6%, (3) rectification -35.8%, (4) dissuasion -22.6%. It is good to note that resistance episodes involved in (1) inaction were not decreased. For (2) acknowledgement, there was an increase in the resistance level. For (3) rectification, the result was a decreased level of resistance by 32.7 percent. For (4) dissuasion, resistance level decrease by 64.5 percent.

5 CONCLUSION

This paper reviewed six (6) journal articles to explore the reasons why people resist an information system implementation. Generally, employees resist the IS implementation due to perceptions. People resist because they perceive that they lose power, they believe that IS in organizations induce changes in organizational elements such as routines, processes, and structure. It is also worth noting that the best two responses to user resistance are (1) rectification and (2) dissuasion.

REFERENCES

Asian Journal of Multidisciplinary Studies Vol. 1, No. 3, Special Issue(2018) ISSN 2651-6691 (Print) ISSN 2651-6705 (Online)

- [1] Murphy, K. M., Shleifer, A., & Vishny, R. W. (1989). Industrialization and the big push. Journal of political economy, 97(5), 1003-1026.
- [2] Littler, C. R., & Salaman, G. (1982). Bravermania and beyond: recent theories of the labour process. Sociology, 16(2), 251-269.
- [3] Mann, F. C., & Williams, L. K. (1960). Observations on the dynamics of a change to electronic data-processing equipment. Administrative Science Quarterly, 217-256.
- [4] Haag, S., Cummings, M., & Dawkins, J. (1998). Management information systems. Multimedia systems, 279, 280-297.
- [5] Power, D. J. (2002). Decision support systems: concepts and resources for managers. Greenwood Publishing Group.
- [6] Van Der Meijden, M. J., Tange, H. J., Troost, J., & Hasman, A. (2003). Determinants of success of inpatient clinical information systems: a literature review. Journal of the American Medical Informatics Association, 10(3), 235-243.
- [7] Liang, H., Saraf, N., Hu, Q., & Xue, Y. (2007). Assimilation of enterprise systems: the effect of institutional pressures and the mediating role of top management. MIS quarterly, 59-87.
- [8] Lindsey, S., & Raghavendra, C. S. (2002). PEGASIS: Power-efficient gathering in sensor information systems. In Aerospace conference proceedings, 2002. IEEE (Vol. 3, pp. 3-3). IEEE.
- [9] Chen, I. J. (2001). Planning for ERP systems: analysis and future trend. Business process management journal, 7(5), 374-386.
- [10] Aladwani, A. M. (2001). Change management strategies for successful ERP implementation. Business Process management journal, 7(3), 266-275.



- Asian Journal of Multidisciplinary Studies Vol. 1, No. 3, Special Issue(2018) ISSN 2651-6691 (Print) ISSN 2651-6705 (Online)
- [11] Lucas Jr, H. C., Swanson, E. B., & Zmud, R. W. (2007). Implementation, innovation, and related themes over the years in information systems research. Journal of the Association for Information Systems, 8(4), 205.
- [12] Hirschheim, R., & Newman, M. (1988). Information systems and user resistance: theory and practice. The Computer Journal, 31(5), 398-408.
- [13] Markus, M. L. (1983). Power, politics, and MIS implementation. Communications of the ACM, 26(6), 430-444.
- [14] Kim, H. W., & Kankanhalli, A. (2009). Investigating user resistance to information systems implementation: A status quo bias perspective. MIS quarterly, 567-582.
- [15] Kerzner, H., & Kerzner, H. R. (2017). Project management: a systems approach to planning, scheduling, and controlling. John Wiley & Sons.
- [16] Chigona, W. (2017, September). Lecturer resistance during ICTs implementation in higher education in Zimbabwe: forms and triggers. In Proceedings of the South African Institute of Computer Scientists and Information Technologists (p. 31). ACM.
- [17] Samhan, B. (2018). Revisiting Technology Resistance: Current Insights and Future Directions. Australasian Journal of Information Systems, 22.
- [18] Ali, M., Zhou, L., Miller, L., & Ieromonachou, P. (2016). User resistance in IT: A literature review. International Journal of Information Management, 36(1), 35-43.
- [19] Chigona, W. (2017, September). Lecturer resistance during ICTs implementation in higher education in Zimbabwe: forms and triggers. In Proceedings of the South African

- Institute of Computer Scientists and Information Technologists (p. 31). ACM.
- [20] Kim, H. W., & Kankanhalli, A. (2009). Investigating user resistance to information systems implementation: A status quo bias perspective. MIS quarterly, 567-582.
- [21] Laumer, S., & Eckhardt, A. (2012). Why do people reject technologies: a review of user resistance theories. In Information systems theory (pp. 63-86). Springer New York.
- [22] Rivard, S., & Lapointe, L. (2012). Information technology implementers' responses to user resistance: nature and effects. MIS quarterly, 897-920.
- [23] Salih, S. H., & Dahlan, H. M. (2013). User resistance factors in post ERP implementation. Journal of research and innovation in information systems, 3, 19-27.
- [24] Laumer, S., Maier, C., Eckhardt, A., & Weitzel, T. (2014). Why are they grumbling about my new system? Theoretical foundation and empirical evidence of employee grumbling as a user resistance behavior.
- [25] Haag, S., Born, F., Kreuzer, S., & Bernius, S. (2013, September). Organizational resistance to e-invoicing—Results from an empirical investigation among SMEs. In International Conference on Electronic Government (pp. 286-297). Springer, Berlin, Heidelberg.