Challenges of IT Adoption at Educational Institutions: Lessons From Bangladesh

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ABSTRACT

Information and communication technology have become more potent over the years and its organization wide usage is ever increasing. New technology integration has been changing the way individuals work and organisations operate. However, despite the many benefits, technology adoption can also be at times problematic and disruptive. This research utilising the case study method investigated the nature of problems and their impacts due to IT changes and automation in educational institutions in Bangladesh. The findings reveal that there are problems related to network; process; interface; and hardware that are causing operational impacts such as disruption, efficiency loss, productivity loss and quality issues of various extent. Furthermore, the paper based on the results of the case study and expert opinion provides a set of recommendations for problem mitigation.

KEYWORDS

Bangladesh, Education Industry, Efficiency, ICT, Impact, Productivity, Technology Acceptance, Technology Integration, Technology Management, Work Process

1. INTRODUCTION

In current knowledge-based society, organizations need to develop competitive advantages by intensive use of information and communication technology (ICT). The use of ICT enabled services has dramatically transformed the nature of traditional style of higher education sector (Ismail, 2016). The stakeholders of the higher education sector including the teachers and students are increasingly aware of the need and importance of adopting the new ICT solutions, however effective adoption of these solutions is yet to be recognized in the developing countries like Bangladesh. The access to the ICT enabled services is only part of the whole story. The ultimate success of ICT adoption and automation in any sector requires a deeper contextual understanding of the challenges involved
in implementation phase. It also requires an alignment between the needs and expectations of the stakeholders, whose interests are involved with the new technologies (Barba-Sánchez et al., 2007). Hence, the successful adoption of ICT solutions cannot be simply considered as technical or just a commercial process, but it should cover a wider research and policy agenda to effectively address the overall complexities involved in the adoption process.

The effectiveness of ICT adoption and automation has a direct correlation with their acceptance by the end users. The benefits of technology adoption could only be realised when the users use them at an adequate level. Thus, we need a deeper understanding about the factors affecting the adoption of new ICT solutions and automation. It also requires sincere and continuous efforts to improve the systems and resources including hardware, software, network infrastructure, and electronic resources to keep up with the fast-changing ICTs (Finlay & Finlay, 1996).

It is often necessary to implement functional changes to reap benefits of IT changes and automation. However, technology changes are only successful, if the users (i.e. faculty members) utilises technology at adequate level and as a strategic resource resulting in innovative, effective and efficient service delivery (Ramzan & Singh, 2010). For successful usage, the faculty members also have to be confident is using the technology at operational level (Christensen, 2002). Overall a positive attitude among the users in accepting the IT changes is a prerequisite condition (Schaper & Pervan, 2007). Hence, organizations implementing IT changes should aim for continuous improvement and necessity to achieve end user satisfaction should never be under-estimated (Taylor & Todd, 1995).

This research is focused on the problems, challenges and subsequent impacts on operation in educational institutions in Bangladesh undergoing technology changes and automation. It is imperative to investigate these issues and its relation to organisational culture; since, such research focusing on Bangladesh is scarce if not non-existent. This study considering the prevailing research gap evaluates the level of technology acceptance among faculty members at a leading private University in Bangladesh. It is expected that the results of this research will be useful in understanding user acceptance levels and provide insights into problems, challenges, impacts and possible mitigation strategies for IT adoption and automation in Bangladesh.

2. MATERIALS AND METHODS

The previous section has highlighted the need to conduct research on problems and potential negative impacts of IT changes and automation in educational institution in a developing country like Bangladesh. Considering the research problem this study has pursued the following four objectives:

**Objective 1:** Identify and articulate the problems and effects caused by IT changes and automation in educational institution.

**Objective 2:** Quantify the risk impacts of the problems caused due to IT changes and automation in educational institution.

**Objective 3:** Compare the problems and effects identified in the case study organization to situation in general in other educational institution.

**Objectives 4:** Propose generalized recommendation for educational institution planning to implement IT changes and automation.

This research adopted the ‘the spiral of applied research’ model by Eckert et al. (2003) as a set of strategies or framework for research. The spiral model is a broad framework used in applied research consisting eight step path which can be repeated in a spiral. The eight steps include key research activities; evaluation of empirical findings; development of - theory, tools, methods, and industry trials. The spiral model was chosen because- it accommodates multiple observational methods including qualitative and quantitative ones; it allows research to start in any of the steps; and it is not necessary
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