Justification of e-Governance in Education: A Multicriteria Decision Approach

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ABSTRACT

In the era of the Information Technology-enabled society, heavy investment is not an afterthought of government. As there is a demand from both sides of the government system, i.e. citizenry and the government resulted in an increase of these projects at a rapid pace. On one hand, the government is increasing the investment but the time has come to show the justification of these investments. On the other hand, available literature is limited and hardly any concrete steps have been taken to investigate the justification and return on investment of these projects, as most of the returns are qualitative in nature. So, there is need for investigation into the issue. In this article, an attempt has been made to consolidate available literature, compare and justify using a multicriteria decision making tool, i.e. AHP and finally, a case discussion on e-governance in the education system of India.

KEYWORDS

AHP, e-Governance, IT Justification, MCDM, ROI

INTRODUCTION

World over Government are trying to increase their effectiveness through different and better mechanism to satisfy citizen needs, e-governance is one such initiative before the government. E-governance is a technology enabled services, has resulted increase in citizen, government satisfaction and improvement in government process resulted in all round development in an around the world. But the degrees of success vary in different countries and Government, India has no exception to it. On the one hand there is a demand on the other hand there is need for investment in these Information Technology enabled services. As these investments are huge Government is feeling the pressure to justify and to measure return on investment (ROI) as it is part public money. No doubt Government in different countries are doing financial audit, but these financial audits take care of expenditure and related issue as per different government regulation. The present form of audit does not have any relationship with the effectiveness of the system. So, government is not able to measure these ROI and not able to justify quantitatively as most of the benefits are qualitative rather than qualitative.

LITERATURE SURVEY

In Literature there is a mix response towards the relation between IT and productivity, some authors found no existence of relationship between IT and productivity (Brynjolfsson, 1993), other found there may be no or negative relationship (Bernt and Morrison, 1995) Allen (1997), Van Nievelt (1999) and Dasgupta et al. (1999). (Morrison and Bernt, 1990) and some also remain silence about the relationship (Strassmann, 1990; Barua et al., 1995; Loveman, 1994). Some author Chen and Zhu 2004 also realized that the link between IT investment and firm performance is indirect. Later in
the year 1998 based on research Brynjolfsson found that there is a positive relationship between IT and investment, which was against his own outcome. Authors has also found positive relationship (Bose (2002), Shin (1999) and Kraemer and Dedrick (1996), recent study also agree with positive relationship, which has resulted large scale implementation. The above variation are described by Marian Carkary, 1998 on Evaluation of ICT Investment Performance, and reveal that due to various factors like organizational change; mis-measurement, organizational weaknesses; lack of analysis; not able to create an better ICT capability; mismanagement of investments; ineffective evaluation methodology (Bharadwaj, 2000; Brynjolfsson and Hitt, 1999; Gregor et al., 2006; Kohli and Deveraj, 2003; Kwom and Watts, 2006; Lillrank et al., 2001; Willcocks and Lester, 1999a). Author has also pointed that justification of IT investment is not easy and complicated because of intangible benefits (Irani, 1999; Irani, Ezingeard, Grieve, & Race, 1999; Swamidass & Kotha, 1998), which are not easily measurable. In the absence of strong methodology, some author argues on the traditional method of IT investment and found negative about their approach (Farbey, Land, and Targett (1992, 1993, 1995), so they conclude that there is no ‘best’ universal solution for diversified projects and the decision of IT investment are complex and not same with other investment, as each investment have their own characteristics, and offers different types of benefits and costs. Similarly, each methodology has its own set of limitations (Irani, Ezingeard, & Grieve, 1997; Peppard & Ward, 1999; Hares & Royle, 1994). According to Parker and Benson (1989), “most chief executive officers (CEOs) are not comfortable with the current tools and techniques used to justify their investments in IT, because they lack the preciseness of definition in the financial methods used” discussed by Gunasekaran et al. 2001. Literature have also seen deteriorating trends in evaluating IT investment, as because absence of right tool and complex nature for evaluation (Ward & Peppard, 2002), Sammon and Adam (2007).

METHODOLOGY

Literature reveals several methods for IT investment justification some of them are from objective, subjective, rational, subjective, interpretive approaches (Wilson and Howcroft, 2005). Some author also proposed IT-Investment framework (Ross & Beath, 2002, Sammon & Adam, 2007), Business Case (Ward, et al., 2007; Davenport, 2000, Kimberling, 2006; Eckartz et al., 2009); Bannister and Remenyi (2000), Lech (2005), Berghout and Renkema (2001) and their methods are different with respect to data and characteristics and they are also option that the accuracy dependent upon selection of an appropriate method and the way it is applied (Berghout, 2002; Khalifa et al., 2001; Pouloudi and Serafeimidis, 1999, Videira and da Cunha’s (2005). Author also argue that justification methods chosen is influenced by many factors (Huang, 2003; Lech, 2005) like social and organizational contexts, the organizational domain, the level of analysis, evaluation purpose and perspective, investment purpose, measurability of system impacts, and ICT application, so they are in opinion that many different metrics are required to evaluate and justify the different aspects of an ICT project. Out of the several method Cost Benefit Analysis (CBA) compares cost for acquisition, implementation and operational and benefits from the usage. (Farbey et al., 1999a; McBride and Fidler, 2003), ratio method (Strassmann, 1990) and option pricing methods (de Jong et al., 1999; Deschoolmester et al., 2004; Fichman, 2004; Kumar, 1998; Lech, 2005; Silviuis, 2004; Toffolon and Dakhli, 2002), Portfolio methods based on their relative positioning on a grid and Investment Portfolio technique (Berghout and Renkema, 2001) are some method focuses on justification of ICT investment. Some authors use an Ex-ante evaluation theory, which uses financial techniques such as the payback period, net present value, internal rate of return, etc., (Al-Yaseen et al., 2006; Doherty and King, 2001; Farbey et al., 1999a; Gwillim et al., 2005. Based on research author have pointed out limitation of the Justification of ICT due to calculation difficulties of cost, benefit, limitations of in evaluation methodology; and social dimension of outcome (Balasubramanian et al, 2000; Ballantine et al., 1999; Berghout and Renkema, 2001; Doherty and King, 2001; Hallikainen, 2002; Mylonopoulos et al., 2004; Nijland, 2003; Powell, 1999; Stansfield et al., 2000; and Willcocks and Lester, 1999b). Finally, they are suggestion
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