Title: A Critical Review of "Assimilation of IT Innovations: Strategies and Moderating Influences."

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Abstract: A paper titled "Assimilation of IT Innovations: Strategies and Moderating Influences." is critically reviewed in this individual report.

A Critical Review of "Assimilation of IT Innovations: Strategies and Moderating Influences."

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ASSIMILATION OF IT INNOVATIONS: STRATEGIES AND MODERATING INFLUENCES

Concepts:

This paper examines the process of new technology assimilation and organizational strategies that facilitate the assimilation process. It determines two major dimensions, which are responsible to assimilation process i. Individual as an innovator ii. Organization as an innovating entity. A four-cell framework is derived across the two dimensions.

Based on the framework three strategies were formulated for assimilation

i. Support (Passive): Individuals are allowed to adopt and diffuse a technology in an exploratory manner.

ii. Advocacy (Proactive): Organization takes an active role in diffusing technology to all individuals.

iii. Total commitment: It is a combination of both support and advocacy.

The paper also examines the key moderating influences on assimilation strategies. Three factors were identified i. Implementation characteristics of the technology. ii. Characteristics of potential adopters

ii. Product or process nature of innovation.

It also analyses the experiences of 9 different organizations in technology assimilation. Based on the case analyses a conceptual model is developed for product and process innovations to determine the choice of assimilation strategy.

Contributions of the paper to the literature:

Many researchers have examined the social, organizational, task, technology and environmental factors in the firm's adoption and diffusion of information technology. Assimilating a new information technology requires large investment of resources; the management can use the contingency approach for technology assimilation process. Depending on the specific location of an organization and a technology within this framework, as well as the desired location, a few generic assimilation strategies allow an organization to move from one cell of the framework to another by influencing individual adoption behavior. This research has used the model to analyze a set of representative cases qualitatively and has extracted a contingency approach to choosing an assimilation strategy. This paper has also set a scope for further research, in the formulation and testing of various hypotheses for technology assimilation.

Methodology:

i. Literature Survey is used. Journals, subject related books are used extensively.

ii. Case study of 9 different organizations is done to determine a conceptual model for assimilating strategies. The organizations range in size from a regional credit union to a large multinational firm, while technological innovations vary from ES for loan evaluation to the use of PC technology.

Conclusions:

The conclusions are well stated. It is supported by the research reported in the paper. This paper studies the process of new technology assimilation and specific organizational strategies that facilitate assimilation process. The four cell framework formulated by innovation adoption and diffusion process on individual and organization dimensions. The three important strategies identified are i. Support ii. Advocacy iii. Total commitment. This paper also identifies three intervening factors play a significant role in affecting the success of diffusion strategies and explains them in detail. The experiences of nine organizations are examined to identify interrelationship between management strategies for diffusion of innovations and the moderating factors. The characteristics of each case are tabulated. A contingency perspective on the choice of assimilation strategy is presented, which is derived inductively from the conceptual model and case analysis. This can be studied under two heading product and process innovations.
The conclusion of the paper might need strengthening. It could have explained the successful implementation of conceptual model in different situations. The scope of flexibility of the model and probable research activities could have been explained.

Similar Research Papers:

The role of networks in the diffusion of technological innovation [2]

This research considers the diffusion of CAPM technology in the UK manufacturing sector during mid to late 80's,focusing on the role of inter-organizational networks in the diffusion process. The author uses three case companies, where the introduction of CAPM occurred at approximately the same time, decisions regarding adoption, design and subsequent implementation are explored in order to establish the influence of inter-organizational networks on the diffusion and subsequent appropriation of CAPM technologies. It has been found that while involvement in inter-organizational networks gave potential adopters access to information about new technology, this information tended to reinforce supplier images of best practice and did not always lead these firms to develop appropriate technological solutions.

When this paper is compared it's found that it supports some of the findings. It considers similar intervening factors that affect the success of diffusion. This paper considers particular diffusion of technology across various companies, whereas the given paper considers diffusion of various technologies across various organizations.

Effective organization and management of technology assimilation: the case of Taiwanese information technology firms [3]

This article examines organizational and management factors influencing technology assimilation in Taiwanese information technology firms. The findings of this empirical research show that effectiveness is significantly higher when multidisciplinary and multifunctional teams are involved in technology assimilation. Managing the interaction between the source and recipient of technology is another critical activity determining the effectiveness of technology assimilation.

This paper can be considered as a process innovation as per the guidelines set by the given paper. The given paper considers implementation and adopter characteristics to determine the strategy this paper uses an idea of effectiveness of assimilation is high in multidisciplinary and multifunctional teams.

The Illusory Diffusion of Innovation: An Examination of Assimilation Gaps [4] [8]

Innovation researchers have known for some time that it is possible for a new technology to be widely acquired but only sparsely deployed among acquiring firms. When this happens, the observed pattern of cumulative adoptions will vary depending on which event in the assimilation process is treated as the adoption event. Instead of mirroring one another, a widening gap- termed here an assimilation gap- will exist between the cumulative adoption curves associated with the alternatively conceived adoption events. This study develops the assimilation gap concept, describes the circumstances under which assimilation gaps should be most likely, proposes techniques for their measurement and analysis, and applies these techniques in a study of three innovations in software development process technology; RDBMS, general purpose fourth generation languages and computer aided software engineering tools (CASE).

When a pronounced assimilation gap exists, the use of cumulative acquisitions as the basis for diffusion modeling can present an illusory picture of the diffusion process-leading to potentially erroneous judgements. The given paper can incorporate the assimilation gap concept in both product and process innovations so that more accurate assimilation strategies can be formulated. The managers be guarded about concluding, based on impressive sales data, that an innovation is necessarily destined to become widely used.

Other research publications:

Organizational Assimilation of Innovations: A multilevel Contextual Analysis [1]

This study examined the assimilation of innovations into organizations, a process unfolding in a series of decisions to evaluate adopt and implement new technologies. Assimilation was conceptualized as a nine-step process and measured by tracking 300 potential adoptions during a six-year period. A model was suggested that organizational assimilation of technological innovations be determined by three classes of antecedents: contextual attributes, innovation attributes and attributes arising from the interaction of contexts and innovations. The antecedents were measured by gathering data from multiple sources using multiple methods and used those data to predict the outcomes of 300-innovation assimilation process in hospitals. The model affords reasonably good predictions of the extent to which a given hospital will assimilate a given innovation: 59 percent variance in evaluation, adoption and implementation explained. It also explains organization assimilation of new technology is highly dependent upon attributes of the particular innovation in which it is embodied and upon attributes of the particular decision process in which it is aired.

Organizational Visions for technology assimilation: the strategic roads to knowledge-based system success [5]

Inspirational leadership and a needs-driven organizational vision are crucial for the effective assimilation of a new or emerging technology. A road metaphor is identified as a basis for crafting and communicating such an organizational vision. Three alternative approaches for achieving strategic impact with a technology are identified and described: the user-driven low road, the technostructure-driven high road and the team based road network. The relative methods are studied using case-based methodology. Based on their research of the KBS technology assimilation processes at Dupont, Digital Equipment, and Xerox the authors offer management advice to practitioners and recommend further areas of study.

Patterns of Advanced Technology adoption and Manufacturing performance [6][13]

The adoption of different technological innovations by manufacturing firms has been linked to increased productivity and higher workforce wages. However, it is not just the number of innovations adopted that trigger these economic advantages. The manner by which technologies have been incorporated into a firm also largely affects industrial productivity and efficiency. It has been found that different manufacturing firms employ varied strategies in assimilating new technology. However, a common trend seems to be the creation of complex technology combinations from simpler components.

Barriers of Quality IS Utilization [7][12]

The main concern in assimilation studies has been rapidity of adoption among potential adopters and a lot of literature exists about independent variables having an impact on the assimilation of IS at both individual and organizational levels. There is a lack of instruments to identify the state of IS utilization in an organizational context, thus management is unable to identify the value or actual problems in IS utilization and this leads to productivity problems. An explanation for such problem is that barriers exist in an organizational context to quality IS utilization. A barrier may originate from structural, managerial, user or IT specific issues or a combination thereof. Author identifies these barriers to quality IS utilization.

Research areas identified for future work:

Develop a model that can incorporate several contextual variables that influence assimilation process.
Devising a model to assimilate a complex information technology and divide the model across different organizations.
Provide a rating scale for each organization by incorporating weightage factors for each variable and finally conclude on an assimilation strategy that suits the organization.

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