STRATEGIC INFORMATION SYSTEMS PLANNING IN BANKING SECTOR — A STUDY IN INDIAN CONTEXT

by

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CERTIFICATE

The thesis entitled "**STRATEGIC INFORMATION SYSTEMS PLANNING IN BANKING SECTOR - A STUDY IN INDIAN CONTEXT**", being submitted by Mr. A.M. RAWANI to the Indian Institute of Technology, Delhi, for the award of the degree of DOCTOR OF PHILOSOPHY (Ph.D.), is a record of bona fide research work carried out by him. He has worked under my supervision, and has fulfilled the requirements for the submission of this thesis, which has attained the standard required for a Ph.D. degree of the institute. The results presented in this thesis have not been submitted elsewhere for the award of any degree or diploma.

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ABSTRACT

Objective of this research is to study the Strategic Information Systems Planning (SISP) practices in banking sector in India. The Indian banking sector mainly consists of public sector, private sector and foreign sector banks. Since three sectors differ in their market share, customer focus and in the attitude of internal people, it is likely that their strategic information systems planning practices may also be different. Therefore, this study intends to examine closely the differences in IS planning characteristics among three sectors of the banks.

There are four specific objectives of the study. First is to explore the difference in IS planning practices among three sub sectors of the banking sector in India. Second is to evaluate the difference in IS planning systems among banks with different roles of IS. Third is to determine causal relationships between various IS planning variables and finally to suggest a framework for SISP for banking sector in India. A general system model of input, process and output is used in the study to identify important research variables. Some of the variables identified are: role of IS, information input to IS planning, degree of formalization of IS planning, planning flow, top management and users involvement in IS planning, business domain analysis, technology domain analysis, industrial relations and customer's requirements analysis. Study also addresses the IS planning outcome issues viz. planning effectiveness and contribution of IS to bank's performance.

The above objectives led to formulation of research hypotheses, which are grouped into two categories. First category is a cluster of hypotheses about role of IS and IS planning variables. Hypotheses about the relationships between various variables are grouped in second category. A combination of quantitative and qualitative methods is used in this study. Questionnaire survey of IT executives in banking sector is arranged for collecting quantitative data. The collected data are analyzed to test the hypotheses. Questionnaire survey of business executives of select banks is also conducted. A comparative analysis of the data obtained from two informants is done.

To compare the planning variables among three sub sectors of banks i.e. public, private and foreign banks, *ANOVA* test of difference is performed. *Post-hoc pair wise multiple comparison* is done to understand the significance of difference in the mean value of various variables among banking sectors. Comparison of planning variables among banks of three sectors confirm that management approach and type of bank significantly influence the IS planning variables. While foreign banks generally have highest scores on most of the planning variables, public sector banks generally have lowest scores. Role of IS among three sectors of banks are compared by using *Chi-square test*. It is found that IS plays *'strategic'* role in private and foreign banks whereas it plays *'support'* role in public sector banks.

First group of hypotheses about role of IS and IS planning variables are tested by using *'t test'*. Results indicate that most of the variables are significantly better for banks those foresee a significant role of IS in future as compared to those do not foresee significant role. It is also found that banks need to analyze the impact of IS projects on industrial relations, irrespective of present or perceived future impact of IS. *Path analysis* is done to test the second group of hypotheses about relationships between various IS planning variables. It is found that top management involvement in IS planning process influences the whole planning exercise. Path coefficient of user involvement to technology domain analysis was found insignificant and its value is also very low. This could be because the banking users in India do not have sufficient technological knowledge of the information systems to help the IS planners. It emphasizes on the need of technical training of users so that they can conceive innovative IS applications and also help to map the information requirements of the bank. The scope of improvement in training focus, methodology and orientation is, therefore, very high.

Case studies are prepared using both quantitative and qualitative data. The qualitative data have been collected using interview and observation techniques. Purposive sampling was done to select the banks for case studies. Two banks are selected from each sector to have a better representation from all the three sectors. Case studies are analyzed using *Situation, Actor, Process (S-A-P) and Learning, Action, Performance (L-A-P)* methodology. Case study analysis indicates that there are differences in the customers and market segment covered by the banks. Foreign and private banks under study have limited number of branches spread mostly in metros and urban cities. On the other hand, public sector banks have branches in rural areas and have responsibility of social commitment. It is found that user's involvement in IS planning has not been very much appreciated, a fact common for all banks in India. Top management involvement in all the banks studied is found to be fair. IT is treated as business partner and one of the critical success factors in private and foreign banks. However, in public sector banks, IT is considered as an important tool to help the managers in handling voluminous work and decision making. For them, IT is vital but ratio of cost to performance is more important.

Finally, a synthesis of learning from the above is used to develop a SISP framework. The use of framework is illustrated by its application in the State Bank of India. Outcome of the framework is sent to key IT practitioners of the bank to seek their opinion on the desirability and feasibility of the outcome. Limited validity of the framework is done by analyzing their opinion. The results of the study will be useful for IS practitioners of the bank to self evaluate and improve SISP practices. The framework presented in this study provides the outline models of how, when and where IS can potentially be implemented in Indian banks, so that IS applications fit with bank's business objectives. It eventually enables the IT managers to formulate bank's IS strategy.

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