

## MASTER'S THESIS

### Critical success factors for strategic information systems planning

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**Critical Success Factors for Strategic Information Systems Planning**

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## **ABSTRACT**

With the wide acceptance of information systems (IS) as an organizational resource, they need to be planned for effective and efficient use. It has been recognized in past studies that strategic IS planning is a key IS issue facing senior executives, and the concept of critical success factors (CSFs) has also received much attention from both researchers and practitioners because knowing the critical areas to manage can enhance the chances of IS planning success. However, in previous research, the relationships between CSFs and strategic IS planning success were not empirically proved. Thus, in order to succeed in strategic IS planning, its CSFs and the relationships among the CSFs and IS planning success should be examined. With this motivation, this study attempts to identify a succinct set of CSFs for strategic IS planning, and propose a model to empirically test the relationships between these CSFs and strategic IS planning success, based on different aspects of success criteria. The CSFs and success criteria were identified from an extensive review of IS planning literature. Through mail surveys, data were collected from senior IS executives. A total of 822 questionnaires were mailed to both foreign and local based companies, and 245 questionnaires were returned by those IS executives mainly who hold a position of IS manager or above. Among them, 182 organizations had experience in strategic IS planning projects and thus they served as usable data base for subsequent data analyses.

In this study, data analyses are performed in two phases. In the first phase, the underlying dimensions of CSFs for strategic IS planning are examined by an exploratory

factor analysis (EFA). The results of EFA show that the seven CSFs are extracted. They are named as: IS Staff Competency (F1), Top Management Attributes (F2), Organizational Facilitation (F3), Organizational Implementation (F4), Planning Resources (F5), Organization-wide Cooperation (F6), and Participation in Planning (F7). Having derived the seven dimensions of CSFs, the instrument is then further assessed by a series of reliability and validity tests. With the instrument reliability and validity, the second phase of data analysis is then conducted.

In the second phase, the proposed research model is verified by use of structural equation modeling (SEM). LISREL 8.3 is employed to perform such structural modeling analysis. Before testing the structural model regarding the relationships between the CSFs which are derived from the EFA and various strategic IS planning success criteria, the measurement models for both CSFs and planning success criteria need to be confirmed. Planning success criteria adopted in this study are Alignment (ALIGN) (i.e. the close linkage between business and IS), Analysis (ANALY) (i.e. the provision of better understanding of the internal operations of the organization), Cooperation (COOPER) (i.e. the level of agreement and coordination among organizational subunits), and Improvement in Capabilities (CAPAB) (i.e. the capability of the planning process). Through the model refining process using confirmatory factor analysis (CFA), construct reliability as well as convergent and discriminant validities of the measurement models of CSFs and strategic IS planning success are supported by a series of statistical indices. The results show a well-established six-dimension scale of CSFs and a four-dimension scale of planning success. One dimension of CSFs, Participation in Planning (F7), however, is removed due to its low construct reliability.

Having validated the measurement models, the structural model is examined. The results reveal that IS Staff Competency (F1), Top Management Attributes (F2), Organizational Implementation (F4), and Planning Resources (F5) are significantly related to the Alignment (ALIGN). All the factors show to be positively related to the Alignment (ALIGN) except Planning Resources (F5). Three CSFs are found significantly and positively related to the Analysis (ANALY). They are IS Staff Competency (F1), Organizational Facilitation (F3), and Organizational Implementation (F4). In addition, IS Staff Competency (F1), Organizational Implementation (F4), and Organization-wide Cooperation (F6) are significantly positively related to both Cooperation (COOPER) and Improvement in Capabilities (CAPAB). However, Planning Resources (F5) is found to be significantly and negatively related to the Improvement in Capabilities (CAPAB). Therefore, the hypotheses in this study are only partially supported.

Based on the above findings, this study fills the gap that there are significant relationships between the CSFs and strategic IS planning success. As a result, managerial implications of these findings are presented. As this study found that IS Staff Competency (F1) and Organizational Implementation (F4) are significantly critical to planning success in terms of the four success criteria, some valid recommendations are highlighted. The study suggested that senior management should foster the competence of IS staff for effective IS planning by providing training programs, rewarding the staff with good performance, and offering more chances for IS staff to learn about the business. Besides, IS staff should keep themselves as knowledgeable about the business and technical aspects, and responsive to users' requests. These not only instill users' confidence towards IS staff, but also make IS staff devise appropriate IS plans easily. Furthermore, implementation mechanisms should be highly emphasized which include the monitoring system for review and feedback, the continued commitment of top management and users during the

implementation process, and the adequacy of resources for the implementation of the IS plan. Such mechanisms certainly help to implement the IS plan which in turn bring about effective IS planning. Apart from these, some implications which would be helpful in fostering the other four CSFs to planning success are also recommended.

As a whole, this thesis provides some indications for practitioners to know better about the importance of particular factors to strategic IS planning success in terms of the different success criteria. For academicians, this study provides a manageable and meaningful factor set for CSFs which can be served as a basis for future research in the IS planning area.

## TABLE OF CONTENTS

	PAGE
<b>DECLARATION</b> .....	i
<b>ABSTRACT</b> .....	ii
<b>ACKNOWLEDGEMENTS</b> .....	vi
<b>TABLE OF CONTENTS</b> .....	vii
<b>LIST OF TABLES</b> .....	x
<b>LIST OF FIGURES</b> .....	xii
<b>LIST OF ABBREVIATION</b> .....	xiii
<b>CHAPTER 1 INTRODUCTION</b> .....	1
1.1 Background of the Study .....	1
1.2 Objectives of the Study .....	3
1.3 Organization of the Thesis .....	4
<b>CHAPTER 2 LITERATURE REVIEW</b> .....	6
2.1 Strategic IS Planning .....	6
2.2 Critical Success Factors (CSFs) .....	8
2.2.1 Past Research on Critical Success Factors (CSFs) for Strategic IS Planning .....	9
2.2.2 Other Research on Studying Factors for IS Planning Success .....	12
2.3 Strategic IS Planning Success .....	15
2.3.1 Theoretical Perspectives for Assessing Strategic Planning Success .....	16
2.3.2 Past Research on IS Planning Systems Success .....	17
2.4 Measurements of Critical Success Factors (CSFs) for Strategic IS Planning .....	23
2.5 Summary .....	26

<b>CHAPTER 3</b>	<b>METHODOLOGY</b>	<b>27</b>
3.1	Model Development	27
3.2	Model Explanation	29
3.3	Operationalization	29
3.3.1	Operationalization of Critical Success Factors (CSFs)	30
3.3.2	Operationalization of Strategic IS Planning Success	31
3.4	Instrument Development	32
3.5	Research Sampling	33
3.5.1	Respondents	34
3.5.2	Refinement of Research Instrument	34
3.6	Statistical Method	35
3.6.1	Exploratory Factor Analysis (EFA)	36
3.6.2	Structural Equation Modeling (SEM)	37
3.7	Summary	40
<b>CHAPTER 4</b>	<b>RESEARCH FINDINGS FROM PHASE ONE</b>	<b>41</b>
4.1	Sample Profile	41
4.2	Exploratory Factor Analysis (EFA)	44
4.3	Mean Scores of the Critical Success Factors (CSFs), and Strategic IS Planning Success Criteria	47
4.4	Reliability	48
4.5	Validity	49
4.5.1	Content Validity	50
4.5.2	Convergent Validity	50
4.5.3	Discriminant Validity	52
4.6	Summary	54
<b>CHAPTER 5</b>	<b>RESEARCH FINDINGS FROM PHASE TWO</b>	<b>55</b>
5.1	Model Refinement and Research Hypotheses	55
5.2	Data Analysis by Using Structural Equation Modeling (SEM)	58
5.2.1	Confirmatory Factor Analysis (CFA) of the Critical Success Factors (CSFs) Scale	58
5.2.2	Confirmatory Factor Analysis (CFA) of the Strategic IS Planning Success Scale	65
5.2.3	Confirmatory Factor Analysis (CFA) of All Constructs in the Research Model	70
5.2.4	Structural Equation Model	73



5.2.4.1	Explaining Alignment (ALIGN)	73
5.2.4.2	Explaining Analysis (ANALY)	74
5.2.4.3	Explaining Cooperation (COOPER)	75
5.2.4.4	Explaining Improvement in Capabilities (CAPAB)	75
5.3	Summary	78
<b>CHAPTER 6 DISCUSSIONS</b>		<b>80</b>
6.1	Discussing the Critical Success Factors (CSFs)	80
6.2	Explaining Alignment (ALIGN)	81
6.3	Explaining Analysis (ANALY)	83
6.4	Explaining Cooperation (COOPER)	85
6.5	Explaining Improvement in Capabilities (CAPAB)	86
6.6	Summary	88
<b>CHAPTER 7 IMPLICATIONS AND CONCLUSION</b>		<b>90</b>
7.1	Academic Contributions	90
7.2	Practical Implications	92
7.3	Fulfillment of Research Objectives	96
7.4	Limitations and Future Research Efforts	98
7.5	Conclusion	100
7.6	Summary	101
<b>REFERENCES</b>		<b>102</b>
<b>APPENDIX A</b>		<b>109</b>
<b>APPENDIX B</b>		<b>114</b>
<b>APPENDIX C</b>		<b>115</b>
<b>APPENDIX D</b>		<b>116</b>
<b>APPENDIX E</b>		<b>118</b>
<b>CURRICULUM VITAE</b>		<b>120</b>