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STRATEGIC VALUATION OF ENTERPRISE INFORMATION TECHNOLOGY
ARCHITECTURE IN HEALTHCARE ORGANIZATIONS

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Randy V. Bradley

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VITA

Randy V Bradley, a native of Stockton, AL, and a current resident of Knoxville, TN, earned both the Bachelor of Computer Engineering and the Master of Management Information Systems (MIS) degrees from Auburn University. After obtaining his Bachelors degree, he worked for Southwire Company as a Systems Engineer/Database Analyst. After a brief stint with Southwire, he joined Computer Sciences Corporation (CSC) as a Database Administrator (DBA). While with CSC, he worked on several large-scale national and international contracts as a DBA and consultant. During his time with CSC, he started pursuing his Masters degree while maintaining his duties as a DBA and consultant. Prior to completing his Masters degree, he was promoted to senior DBA at the rank of Computer Scientist. Shortly after this promotion, he completed his Masters and decided to pursue a Ph.D. in Management of Information Technology and Innovation. While in the Ph.D. program, he accepted a position at Troy University – Phenix City as Assistant Professor and Program Director of MIS.

DISSERTATION ABSTRACT

STRATEGIC VALUATION OF ENTERPRISE INFORMATION TECHNOLOGY
ARCHITECTURE IN HEALTHCARE ORGANIZATIONS

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The knowledge and skills required to manage information technology (IT) resources are obtained, driven, and dictated by a firm's information technology architecture (ITA). IT resources are assets and capabilities that are available and useful in detecting and responding to market opportunities or threats. Given the need for firms to be able to achieve and sustain competitive advantage in the midst of a dynamic and uncertain environment, it is important to identify IT resources that can facilitate superior performance. The IT resources realized as a result of employing an ITA are believed to enable firms to acquire and sustain a competitive advantage. Therefore, it should come as

no surprise that the implementation and utilization of an ITA has become an urgent priority for many firms. It is expected that appropriate leveraging of IT resources will provide firms with competencies that are congruent with their competitive needs rather than existing patterns of usage within the firm.

This study seeks to contribute to the literature on strategic IT management by pursuing three specific goals. First, it provide further insights into the strategic value, to firms, of ITA by assessing the influence of the ITA maturity on IS success and firm performance. Second, it evaluates the nature of these influences through the mediation of IT resources, specifically IT infrastructure flexibility (ITIF), and strategic alignment. Finally, the study employs a contingency variable, corporate culture, as a moderator to all of the relationships in the study in an effort to provide a better understanding of these relationships.

The findings of the present study suggest that along certain dimensions the level of ITA maturity is paramount when determining the level of IT infrastructure flexibility and strategic alignment. In addition, the findings indicate that the corporate culture exhibited by an organization moderates the nature of the influence of the elements of ITA maturity on both IT infrastructure flexibility and strategic alignment. As it relates to IS success and firm performance, the findings of the present study suggest that the corporate culture exhibited by an organization and the level of ITA maturity along certain dimensions are also critical when determining the level of IS success and firm performance.

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TABLE OF CONTENTS

LIST OF TABLES.....	xv
LIST OF FIGURES.....	xvii
CHAPTER 1: INTRODUCTION.....	1
The Research Model and Constructs.....	3
ITA Maturity.....	4
IT Capability Intent.....	5
Risk Mitigation.....	5
Business Case for IT.....	6
Locus of IT Decision-Making.....	6
Key IT Governance Initiatives.....	7
IT Resources.....	7
IT Infrastructure Flexibility (ITIF).....	9
Strategic Alignment.....	9
IS Success.....	10
Corporate Culture.....	11
Theoretical Development.....	12
Problem Identification.....	14
Development of Research Questions.....	17
Expected Contribution to the Field.....	19

Significance of Proposed Study	19
Expected Contributions	19
CHAPTER 2: LITERATURE REVIEW	21
Review of Organizational Architectures	22
IS Architecture (ISA): A Systems Development Architecture	22
Information Architecture (IA): An Information Management Architecture	24
IT Architecture (ITA): An Enterprise Resource Management Architecture	26
Development of the ITA Maturity Construct	29
IT Capability Intent	29
Risk Mitigation	29
Business Case for IT	30
Locus of IT Decision-Making	30
Key IT Governance Initiatives	31
IT Infrastructure Flexibility	32
Strategic Alignment	34
IS Success (ISS)	37
Corporate Cultural Types	39
Development of Hypotheses	41
ITA Maturity and ISS	41
ITA Maturity and ITIF	43
ITA Maturity and Strategic Alignment	45
ITIF and ISS	47

ITIF and Firm Performance	49
Strategic Alignment and ISS.....	50
Strategic Alignment and Firm Performance.....	51
ISS and Firm Performance.....	52
CHAPTER 3: RESEARCH METHODOLOGY.....	55
Context.....	55
Research Domain and Participants	55
Research Domain	55
Participants	57
Research Model and Measurement Instruments.....	58
Research Model.....	58
Measurement Instruments.....	59
Items to Measure ITA Maturity.....	59
Items to Measure ITIF	60
Items to Measure Strategic Alignment.....	60
Items to Measure IS Success	61
Items to Measure Firm Performance.....	62
Items to Measure Corporate Culture	62
Procedures.....	65
Preliminary Testing.....	66
Statistical Analysis	66
Summary.....	67

CHAPTER 4: ANALYSES AND RESULTS.....	68
Data Collection	68
Survey Administration	68
Data Analyses	71
Measurement Model	72
Reliability and Validity.....	72
Cluster Analysis Results	74
Control Variables	75
Structural Model.....	76
Results of Hypothesis Testing	77
Hypotheses 1 and 2.....	81
Hypotheses 3 and 4.....	85
Hypotheses 5 and 6.....	88
Hypotheses 7 and 8.....	92
Hypotheses 9 and 10.....	95
Hypotheses 11 and 12.....	100
Hypotheses 13 and 14.....	103
Hypotheses 15 and 16.....	108
Summary.....	112
CHAPTER 5: DISCUSSION AND IMPLICATIONS	114
Research Implications	131
Managerial Implications.....	133

BIBLIOGRAPHY	140
APPENDIX A: IT ARCHITECTURE SURVEY	151
APPENDIX B: IT INFRASTRUCTURE FLEXIBILITY SURVEY	157
APPENDIX C: INFORMATION EMAIL	161
APPENDIX D: SPONSOR LETTER	164
APPENDIX E: FIRST FOLLOW-UP EMAIL	166
APPENDIX F: SECOND FOLLOW-UP EMAIL	168

LIST OF TABLES

Table 1.1	
Typology of IS Resources	8
Table 2.1	
Summary of Study Hypotheses	54
Table 3.1	
Theoretical Foundation for Construct and Factors Measured	64
Table 3.2	
Targeted Respondents for Measurement Instruments	65
Table 4.1	
Descriptive Statistics and Demographics of Responding Organizations	70
Table 4.2	
CIO Reporting Structure	71
Table 4.3	
Reliability Estimates	73
Table 4.4	
Inter-Construct Correlations	74
Table 4.5	
Cluster Analysis Results	75

Table 4.6

Summary of Study Hypotheses.....113

LIST OF FIGURES

Figure 1.1	
Conceptual Research Model	4
Figure 2.1	
ITA Maturity Model	28
Figure 2.2	
The Strategic Alignment Model.....	36
Figure 2.3	
Research Model	41
Figure 3.1	
Research Model	58
Figure 4.1	
Combined Model Results	78
Figure 4.2	
Model Results for Entrepreneurial Organizations	79
Figure 4.3	
Model Results for Formal Organizations.....	80
Figure 4.4	
Combined Model Results Pertaining to Hypothesis 1.....	82

Figure 4.5	
Entrepreneurial Model Results Pertaining to Hypothesis 2	83
Figure 4.6	
Formal Model Results Pertaining to Hypothesis 2.....	84
Figure 4.7	
Combined Model Results Pertaining to Hypothesis 3.....	86
Figure 4.8	
Entrepreneurial Model Results Pertaining to Hypothesis 4	87
Figure 4.9	
Formal Model Results Pertaining to Hypothesis 4.....	88
Figure 4.10	
Combined Model Results Pertaining to Hypothesis 5.....	90
Figure 4.11	
Entrepreneurial Model Results Pertaining to Hypothesis 6	91
Figure 4.12	
Formal Model Results Pertaining to Hypothesis 6.....	92
Figure 4.13	
Combined Model Results Pertaining to Hypothesis 7.....	93
Figure 4.14	
Entrepreneurial Model Results Pertaining to Hypothesis 8	94
Figure 4.15	
Formal Model Results Pertaining to Hypothesis 8.....	95

Figure 4.16	
Combined Model Results Pertaining to Hypothesis 9.....	97
Figure 4.17	
Entrepreneurial Model Results Pertaining to Hypothesis 10.....	98
Figure 4.18	
Formal Model Results Pertaining to Hypothesis 10.....	99
Figure 4.19	
Combined Model Results Pertaining to Hypothesis 11	101
Figure 4.20	
Entrepreneurial Model Results Pertaining to Hypothesis 12.....	102
Figure 4.21	
Formal Model Results Pertaining to Hypothesis 12.....	103
Figure 4.22	
Combined Model Results Pertaining to Hypothesis 13	105
Figure 4.23	
Entrepreneurial Model Results Pertaining to Hypothesis 14.....	106
Figure 4.24	
Formal Model Results Pertaining to Hypothesis 14.....	107
Figure 4.25	
Combined Model Results Pertaining to Hypothesis 15	109
Figure 4.26	
Entrepreneurial Model Results Pertaining to Hypothesis 16.....	110

Figure 4.27

Formal Model Results Pertaining to Hypothesis 16..... 111

CHAPTER 1: INTRODUCTION

Better management of information technology (IT) resources can be facilitated by the implementation and utilization of an organizational architecture, specifically an IT architecture (ITA). Briefly speaking, an ITA is a plan or set of plans that guides the identification and utilization of the technical and human IT resources at the disposal of an organization (Curle 1993; Hildebrand 2000) that enabling the organization to successfully accomplish its business objectives. The ITA is not to be confused with the information systems (IS) or IT plan. Although the three are similar in nature, there are significant differences.

The focal point of the IS plan is the enablement of the identification and development of independent applications and stand-alone systems. One contributing factor is that the depth of the IS plan is, in most cases, limited to a specific functional area within a business unit, totally ignoring the needs of other business units and the enterprise as a whole (Galliers, Swatman, and Swatman 1995; Goodhue, Kirsch, Quillard, and Wybo 1992a; Goodhue, Quillard, and Rockart 1988; Kim and Everest 1994b; Zachman 1982). Furthermore, even in cases where the IS plan is designed from an "enterprise" point of view, it's focus is still limited to data sharing and systems integration across functional areas in a limited number of business units (Brancheau, Janz, and Wetherbe 1996; Goodhue et al. 1992a; Niederman, Brancheau, and Wetherbe 1991; Segars and Grover

1998; Sowa and Zachman 1992). Although a high quality IS plan can lead to highly developed applications and systems, for all practical purposes it results in the development of systems whose processes are limited to a subset of the enterprise in a particular geography (Goodhue et al. 1992a; Ross 2003; Zachman 1982). Conversely, the ITA serves as the organizing logic for enterprise-wide data sharing, systems integration, and application development across business units and throughout the enterprise regardless of geography. In addition, whereas the IS plan treats the data architecture and applications architecture as two related, but disjointed pieces (Periasamy and Feeny 1997), the ITA views them as one cohesive unit.

The IT plan is more exhaustive than the IS plan and more closely resembles the ITA. The IT plan results from the process of considering and formally asserting the IT development strategies, the overall purpose for IT, the priorities of IT, and, possibly, a coordination of the IT resources with business strategy and structure (Sabherwal 1999; Sabherwal and Chan 2001). The IT plan is a fundamental guide for the development and acquisition of IS, IT infrastructure, data, and networks in an organization. A major differentiator between the IT plan and the ITA is the level of focus. Whereas the IT plan primarily focuses on the technical component and physical aspects of the IT platform, the ITA focuses on the human component in addition to the technical component, the physical and logical aspects of the IT platform (Manwani 2002), and mitigation of social and technical risk factors (Earl 1989; Raghunathan, Ragu-Nathan, Tu, and Shi 2001). Furthermore, the ITA encompasses the IT plan and extends it so as to help establish standards that will affect the connectivity, compatibility, and modularity of the IT platform