

DEVELOPMENT AND VALIDATION OF FLEXIBILITY MATURITY MODEL

ARNAB MITRA



**DEPARTMENT OF MANAGEMENT STUDIES
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DEVELOPMENT AND VALIDATION OF FLEXIBILITY MATURITY MODEL

by

ARNAB MITRA

Department of Management Studies

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CERTIFICATE

This is to certify that the thesis titled “**DEVELOPMENT AND VALIDATION OF FLEXIBILITY MATURITY MODEL**” is a bona fide record of work carried out by **Mr. Arnab Mitra** under my supervision, in fulfillment of the requirement of the degree of **Doctor of Philosophy** of Indian Institute of Technology Delhi. The work has not been submitted anywhere else for the award of any degree or diploma.

Date:

(Prof. Sushil)
Research Supervisor
Department of Management Studies
Indian Institute of Technology Delhi
Hauz Khas, New Delhi- 110 016

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New Delhi

(Arnab Mitra)

Abstract

In today's complex business scenario, every organization is thriving to achieve competitive advantage to survive. To address this challenge, flexibility maturity model has been conceptualized and developed with the confluence of three paradigms, flexibility, controllability, and enterprise risk. The conceptual model has six levels with distinct features at every level separating one from the other. Level one deals with the creation of options in processes and change management initiative, level two imbibes flexibility within the interface of the processes, level three connects actors with the processes and brings in sustainability and vitality within the organization. Level four deals with the strategic intent of the organization by creating confluence between continuity and change, level five brings flexibility across the value chain while level six is about strategic flexibility across the ecosystem of the organization. In this research, an attempt was made to identify factors of flexibility, controllability and risk through an empirical study. Initially, judgemental sampling was done to identify and select flexibility, controllability and risk parameters. Then those parameters were further decomposed to its elements to conduct the empirical survey over two hundred and two CXO respondents. Post analysis of the response, flexibility, controllability and risk factors were identified. The relationships between factors were also described with the objective to ascertain the degree of influence propagating across the developed model. The objective was to associate factors to the levels to understand the state of an organization on the basis of its maturity from flexibility perspective. Post-development of the model, it was validated by assessing how each factor are being explained by other factors and a modified interpretation of the relationship between factors could be arrived from the perspective of being direct or transitive. Then this model was cross-validated by applying into two organizations to ascertain its

operational feasibility in the real business scenario. Since the number of respondents was more from the manufacturing sector, organizations were chosen from the same sector. Accessibility at the top management level and their willingness to participate in this research by devoting quality time was one major parameter considered while selecting those organizations to carry out the process of cross-validation. To make the variation in case analysis, one organization was a part of the process manufacturing industry, and the other one was a part of discrete manufacturing. A comparative analysis was done to get the right perspective from 'flexibility maturity model' point of view. After synthesizing the learning from the research, an indicative adoption framework was suggested for the organizations trying to attain a higher level of the 'flexibility maturity model'. This research was conducted across multiple sectors. Sector-specific further research should be carried out so that this empirical work can be validated under a controlled situation. Organizations, trying to imbibe flexibility with the confluence of controllability and risk paradigms would like to be a part of this assessment.

सार

आज के जटिल व्यावसायिक परिदृश्य में प्रत्येक संगठन जीवित रहने के लिए प्रतिस्पर्धात्मक लाभ प्राप्त करने के लिए प्रयासरत है। इस चुनौती को हल करने के लिए, लचीलापन परिपक्वता मॉडल को तीन प्रतिमानों, लचीलापन, नियंत्रणीयता और उद्यम जोखिम के संगम के साथ अवधारणा और विकसित किया गया है। वैचारिक मॉडल में प्रत्येक स्तर पर अलग-अलग विशेषताओं के साथ छह स्तर हैं जो एक को दूसरे से अलग करते हैं। स्तर एक प्रक्रियाओं में विकल्पों के निर्माण और परिवर्तन प्रबंधन पहल से संबंधित है, स्तर दो प्रक्रियाओं के इंटरफेस के भीतर लचीलापन, स्तर तीन अभिनेताओं को प्रक्रियाओं से जोड़ता है और संगठन के भीतर स्थिरता और जीवन शक्ति लाता है। स्तर चार निरंतरता और परिवर्तन के बीच संगम बनाकर संगठन के रणनीतिक इरादे से संबंधित है, स्तर पाँच मूल्य श्रृंखला में लचीलापन लाता है जबकि स्तर छह संगठन के पारिस्थितिकी तंत्र में रणनीतिक लचीलापन के बारे में है। इस शोध में, एक अनुभवजन्य अध्ययन के माध्यम, लचीलापन, नियंत्रणीयता और जोखिम कारकों की पहचान करने का प्रयास किया गया था। प्रारंभ में, लचीलापन, नियंत्रणीयता और जोखिम मापदंडों की पहचान और चयन करने के लिए निर्णय संबंधी नमूनाकरण किया गया था। फिर उन मापदंडों को, दो सौ और दो सीएक्सओ उत्तरदाताओं पर अनुभवजन्य सर्वेक्षण करने के लिए, इसके तत्वों के लिए विघटित किया गया था। प्रतिक्रिया के विश्लेषण के बाद लचीलापन, नियंत्रणीयता और जोखिम कारकों के की गई। कारकों के बीच संबंधों को भी उद्देश्य के साथ वर्णित किया गया था ताकि विकसित मॉडल में प्रसार के प्रभाव का स्तर पता लगाया जा सके। उद्देश्य एक संगठन की स्थिति को लचीलेपन के दृष्टिकोण से उसकी परिपक्वता के आधार पर समझने के लिए कारकों को संबद्ध करना था। मॉडल के विकास के बाद, यह आकलन करके मान्य किया गया था कि प्रत्येक कारक को अन्य कारकों द्वारा कैसे समझाया जा रहा है और कारकों के बीच संबंध की एक संशोधित व्याख्या प्रत्यक्ष या सकर्मक होने के दृष्टिकोण से आ सकती है। तब इस मॉडल को वास्तविक व्यापार परिदृश्य में इसकी परिचालन व्यवहार्यता का पता लगाने के लिए दो संगठनों में आवेदन करके परिणाम का सत्यापन

किया गया था। चूंकि उत्तरदाताओं की संख्या विनिर्माण क्षेत्र से अधिक थी इसलिए उसी क्षेत्र से संगठनों को चुना गया था। शीर्ष प्रबंधन स्तर पर पहुंच और गुणवत्ता समय को समर्पित करके इस शोध में भाग लेने की उनकी इच्छा एक प्रमुख पैरामीटर था, जिसे क्रॉस-वैधीकरण की प्रक्रिया को पूरा करने के लिए उन संगठनों का चयन करते समय माना गया। केस विश्लेषण में भिन्नता बनाने के लिए, एक संगठन प्रक्रिया निर्माण उद्योग का एक हिस्सा था और दूसरा एक असतत विनिर्माण का एक हिस्सा था। लचीलापन परिपक्वता मॉडल बिंदु से सही परिप्रेक्ष्य प्राप्त करने के लिए एक तुलनात्मक विश्लेषण किया गया। शोध से शिक्षण को संश्लेषित करने के बाद, लचीलापन परिपक्वता मॉडल के उच्च स्तर को प्राप्त करने की कोशिश कर रहे संगठनों के लिए एक संकेत दत्तक ग्रहण ढांचा का सुझाव दिया गया। यह शोध कई क्षेत्रों में किया गया था। आगे अनुसंधान सेक्टर-विशिष्ट किया जाना चाहिए ताकि इस अनुभवजन्य कार्य को नियंत्रित स्थिति के तहत मान्य किया जा सके। जो संगठन लचीलापन और जोखिम प्रतिमान के संगम के साथ लचीलेपन को दूर करने की कोशिश कर रहे हैं, वे इस मूल्यांकन का एक हिस्सा बनना चाहेंगे

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NOMENCLATURE

ANOVA	:	Analysis of Variance
BI	:	Business Intelligence
BER		Business Environment Risk
CRM	:	Customer Relationship Management
CMM	:	Capability Maturity Model
CPM	:	Corporate Performance Management
CLTV	:	Customer Lifetime Value
CXO	:	Chief Executive Officer, Chief Information Officer, Chief Finance Officer
DDC		Dynamic Distribution Channel
ERP	:	Enterprise Resource Planning
FC	:	Financial Control
ERM	:	Enterprise Risk Management
FMM	:	Flexibility Maturity Model
GRC	:	Governance Risk and Control
GST	:	Goods and Service Tax
GOI	:	Government of India
GC	:	Governance and Compliance
IPR	:	Individual Performance Indicator
ISM	:	Interpretive Structural Modeling
IER		Inward Oriented External Risk
ISO	:	The International Organization for Standardization
IPI		Individual Performance Indicator
KPI	:	Key Performance Indicators
KM	:	Knowledge Management
MSF		Market Side Flexibility
MD	:	Managing Director
OD	:	Organizational Dynamism

SCO	:	Strategic Customer Orientation
SD	:	System Dynamics
SPSS	:	Statistical Package for the Social Sciences
SAP	:	Systems Application Product in data processing
TQM	:	Total Quality Management
TISM	:	Total Interpretive Structural Modeling
TRT	:	Transportation Research Thesaurus
TPSD	:	Traditional Process of Service Delivery
VP		Vice President
Vigi		Vigilance