

CHAPTER 7

Synthesis of Learning and Validated Model for Enterprise Performance Management System Effectiveness

7.1 Introduction

Globalization and liberalization has put continuous pressure on the firms to become globally competitive and deliver superior value to the stakeholders. This requires adoption of strategic enterprise performance measurement and management system, and flexibilities in oil industry. There has been considerable research in performance management in terms of KPIs, and dimensions of measurement but studies on factors and flexibilities contributing to the performance measurement system effectiveness are few. These are the major factors being explored in this research study for Indian upstream oil sector.

This chapter presents the synthesis of the learning from the survey and case studies, based on which the EMPS effectiveness model has been evolved. The model of EPMS effectiveness uses the factors influencing effectiveness, for which research hypotheses are found to be true (chapter 5) and which are also supported by learning from case studies. The focus in this chapter is to identify gaps and common findings between survey and case studies of select Indian oil companies. It also brings out interpretation of relationships of macro and micro variables through insight gained in the case studies.

7.2 Synthesis of Research Findings

The conceptual model was evolved in chapter three (refer Figure 3.1) for enterprise performance management system (EPMS) effectiveness based on literature review. The variables influencing effectiveness and dimensions of measurement were also identified from literature survey. These variables formed the basis of survey in Indian upstream oil companies (chapter 4). The comparison of learning from survey (chapter 5) and case studies (chapter 6) has been carried out to bring out the common findings and to support 'weak variables' of one study from the other. The selected variables of EPMS have been synthesized and grouped based on conceptual model to derive a validated EPMS model.

7.2.1 Comparison of Learning from Survey and Case Studies

The qualitative comparison of survey (chapter 5) and case studies (chapter 6) is presented in Table 7.1. Though, the questionnaire designed for survey and questions discussed/observed in case studies were different, it has been noted with satisfaction that the results obtained from both the studies are, by and large, similar and complimentary. The case study analysis is based on semi-structured and face to face interaction with concerned senior executives providing better insight of the variables, their inter-linkages and influences on EPMS effectiveness.

Table 7.1: Qualitative Comparison of Independent Micro Variables of EPMS from Survey and the Case Studies

Macro Variables	Micro Variables	Survey Study Predictor	Case Studies Predictor	Remarks
Strategy Planning (SP)	a) Vision and Mission clarity	H	H	
	b) Setting Strategic Goals	M	M	
Strategic Flexibility (SF)	a) Impact Globalization/ Liberalization	H	H	
	b) In-house Capability	#	H	The empirical study was from larger set of respondents from oil industry including large and small players, whereas case studies were from large organizations only.
	c) External Drives	H	H	
Strategy Implementation (SI)	a) Alignment with Operational Goals	#	H	The empirical study was from larger set of respondents from oil industry including large and small players, whereas case studies were from large organizations only.
	b) Resources Allocation	H	H	
EPMS design (SM)	a) Selection of Dimensions and KPIs	M	M	
	b) Customized EPMS	#	M	The empirical study was from larger set of respondents from oil industry including large and small players, whereas case studies were from large organizations only.
Performance Reporting & Feedback (PR)	a) Performance Reporting & Feedback	M	L	
Information System Flexibility (IF)	a) EPMS Functionality	H	H	
	b) IT Flexibility	H	H	
EPMS Implementation Issues (MI)	a) Effective EPMS Implementation	M	L	
	b) Top Management Support	#	L	The empirical study was from larger set of respondents from oil industry including large and small players, whereas case studies were from large organizations only.
	c) Quality of Data	H	H	

Legend: H: High; M: Medium, L: Low, #: Absent in survey study

From survey, four macro level predictors of EPMS effectiveness emerged from macro analysis are: strategy implementation, strategic flexibility, IS flexibility and EPMS implementation issues, while three additional macro level predictors such as strategy planning, EPMS design, and performance reporting and feedback came up from micro analysis. From micro analysis of survey data, eleven micro predictors have been selected but from case studies, role of all seven macro predictors and fifteen micro predictors, except e-business impact, have been observed. Therefore, these macro as well as micro predictors/variables have been included in final EPMS effectiveness model (Figure 7.1 and 7.2).

7.3 Proposed Integrated Validated Model for EPMS Effectiveness

The validated model for enterprise performance management system (EPMS) effectiveness is based on the findings both from survey and case studies. The validated models at macro level and micro level are shown in Figure 7.1 and Figure 7.2 respectively. The models depict validated links between research variables as proven by regression analysis and case studies. The validated models give a comprehensive view of relationships and can be treated as recommended model.

The aim of research was to identify the different macro and micro variables of EPMS and flexibilities influencing the effectiveness of enterprise performance management system (EPMS) in measuring and managing strategic performance.

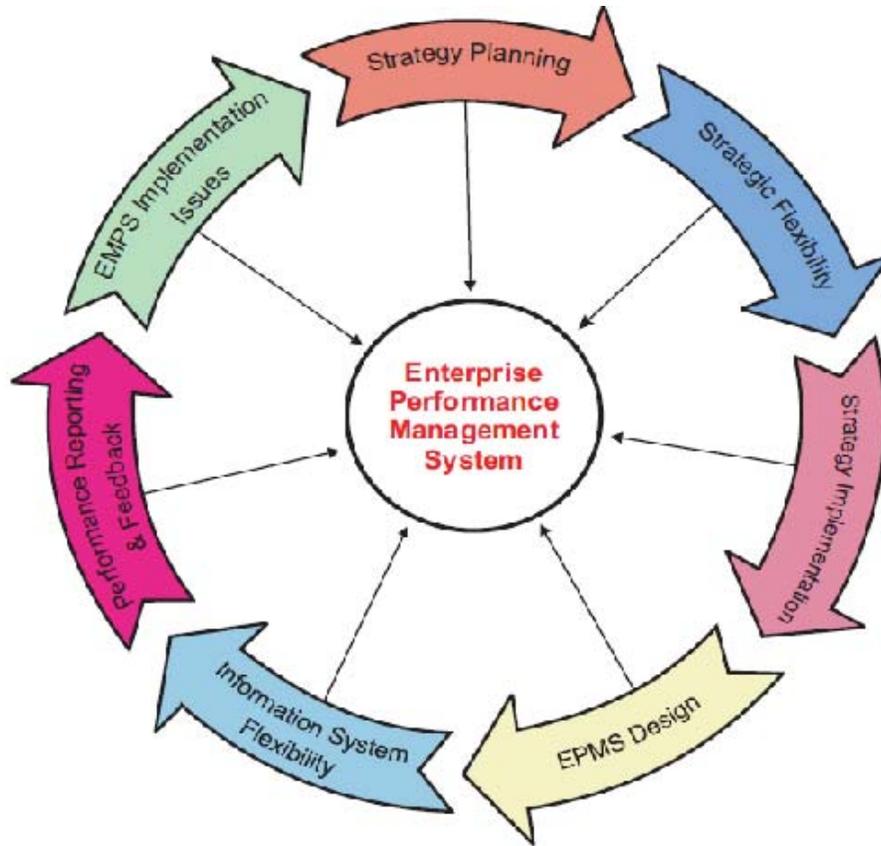


Figure 7.1: Validated Integrated Model for EPMS Effectiveness at Macro Level

The validated model for EPMS effectiveness at macro level (Figure 7.1) exhibits following relationships with interpretations:

- (i) Strategy planning should be tightly integrated with EPMS design and implementation.
- (ii) Strategic flexibility to be considered in EPMS design and implementation.
- (iii) Strategy implementation should also be tightly integrated with EPMS design and implementation.
- (iv) Performance management system design itself has come up as an important aspect of EPMS.
- (v) Performance reporting and feedback provides right information for taking action to bring performance improvement as well as feedback to the planning process and EPMS design.
- (vi) Information system flexibility provides added advantage for deployment of EPMS.
- (vii) EPMS implementation issues play a crucial role in success of EPMS implementation and its effectiveness.

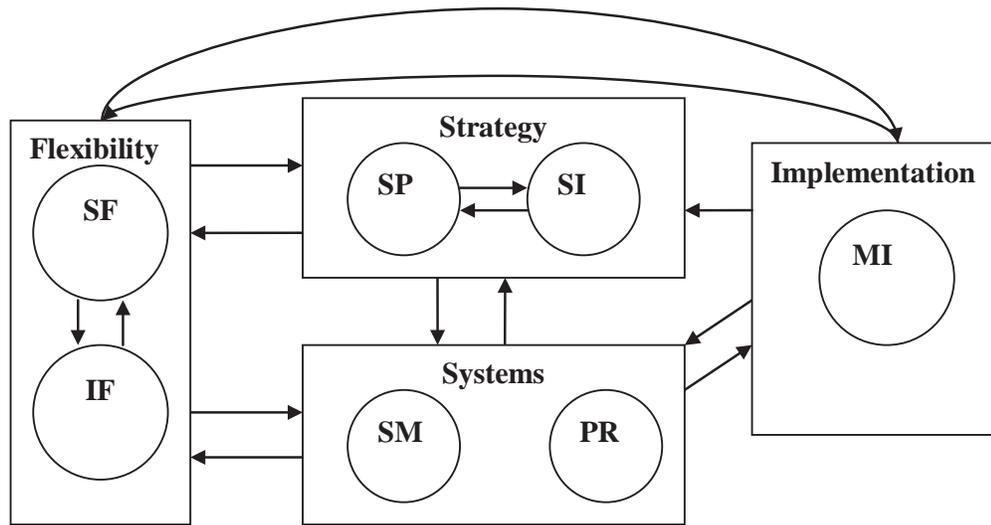
The validated model at micro level (Figure 7.2) exhibits following relationships with interpretations:

- (i) Vision and Mission clarity influences strategic alignment.
- (ii) Strategic goals setting provide strategic monitoring.
- (iii) Impact of globalization and liberalization influences strategic monitoring, customer, and internal business process perspectives.
- (iv) In-house capability provides learning and growth opportunities.

- (v) External drivers such as market forces, government policies, and merger and acquisition influence financial, and customer perspectives.
- (vi) Alignment with operational goals helps in strategic alignment.
- (vii) Resource allocation influences internal business process, and learning and growth perspectives.
- (viii) Selection of key performance indicators and dimensions provide strategic monitoring.
- (ix) Customized EPMS helps in strategic monitoring.
- (x) Performance reporting and feedback provides strategic alignment.
- (xi) EPMS functionality influences almost all aspects of EPMS outcome.
- (xii) IT flexibility influences financial perspective.
- (xiii) Effective EPMS implementation also influences almost all aspect of EPMS outcome.
- (xiv) Top management support is crucial and influences strategic alignment and strategic monitoring.
- (xv) Quality of data flowing into EPMS influences financial perspective and strategic monitoring.

The integrated EPMS model addresses the key relationships of the research variables and hypotheses outlined in chapter three.

The model showing interdependence of independent macro variables of EPMS are represented in Figure 7.3. Similarly the Figure 7.4 is exhibiting the interdependence of dependent micro variables of EPMS effectiveness.



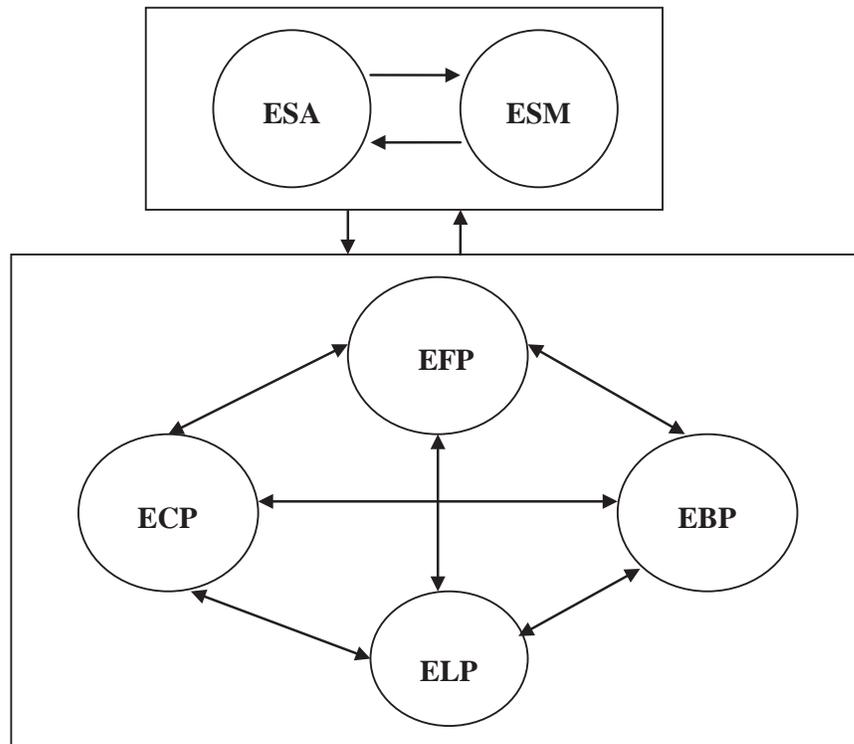
Note: For Variable Codes, refer Tables 4.2, p 89

Figure 7.3: Inter-dependence of Independent Macro Variables of EPMS

The relationships along with interpretations of the model (interdependence of independent macro variables) as shown in Figure 7.3 have been explained as under:

- (i) The independent macro variables of EPMS are correlated and they interact themselves also.
- (ii) There are four major groups such as strategy, flexibility, systems, and implementation, which are interacting with each other in EPMS model.
- (iii) Strategy group consisting of strategy planning and strategy implementation are interacting with each other.
- (iv) Strategic flexibility and information system flexibility are also exhibiting interdependence among themselves.
- (v) System consisting of performance measurement system and performance reporting also interact with each other as shown in the model.

(vi) EPMS implementation has interaction with flexibility as well as systems.



Note: For Variable Codes, refer Tables 4.9, p 98

Figure 7.4: Interdependence of Dependent Micro Variables of EPMS Effectiveness

From Figure 7.4, the relationships and interpretation for model showing interdependence of dependent micro variables of EPMS effectiveness have been made as follows:

- (i) The dependent macro variables of EPMS effectiveness are also strongly correlated.
- (ii) Strategic alignment and strategic monitoring are inter-dependent.
- (iii) There is close inter-dependence among all four perspectives of financial, customer, internal business process, and learning and growth.

- (iv) Achievement of these four perspectives is also dependent on strategic alignment and strategic monitoring.

7.4 Proposed EPMS Maturity Model

Based on literature survey, survey study and case studies, a conceptual framework for enterprise performance management system maturity model (EPM3) is being proposed (refer Figure 7.5) as under:

- Level 1: Initial stage; standalone, traditional.
- Level 2: Strategic aligned.
- Level 3: Benchmarked.
- Level 4: Quality assessed.
- Level 5: Risk assessed and flexibility adopted.

At initial level, it is standalone, non-aligned with strategy, and traditional performance management. Level-2, performance management is aligned with strategy. Level-3, strategic aligned with benchmarks. Level-4 is beyond level-3 integrated with quality assessment. Level-5 is highest level where it is adopted with risk assessment and flexibility. At each level of maturity, EPMS would likely achieve greater level of performance improvement in the organization (Akhtar, Sushil and Mittal, 2010).

Enterprise performance management system standalone, not integrated with strategy, is not able to drive strategic performance improvements. While EPMS aligned with strategy are able to effectively measure and manage performance. If benchmarks are added, it leads to processes improvements in terms of efficiency, productivity and other parameters of various perspectives. As businesses are operating in competitive and turbulent environment, they are exposed to various degrees of risks, which need to be assessed and mitigated

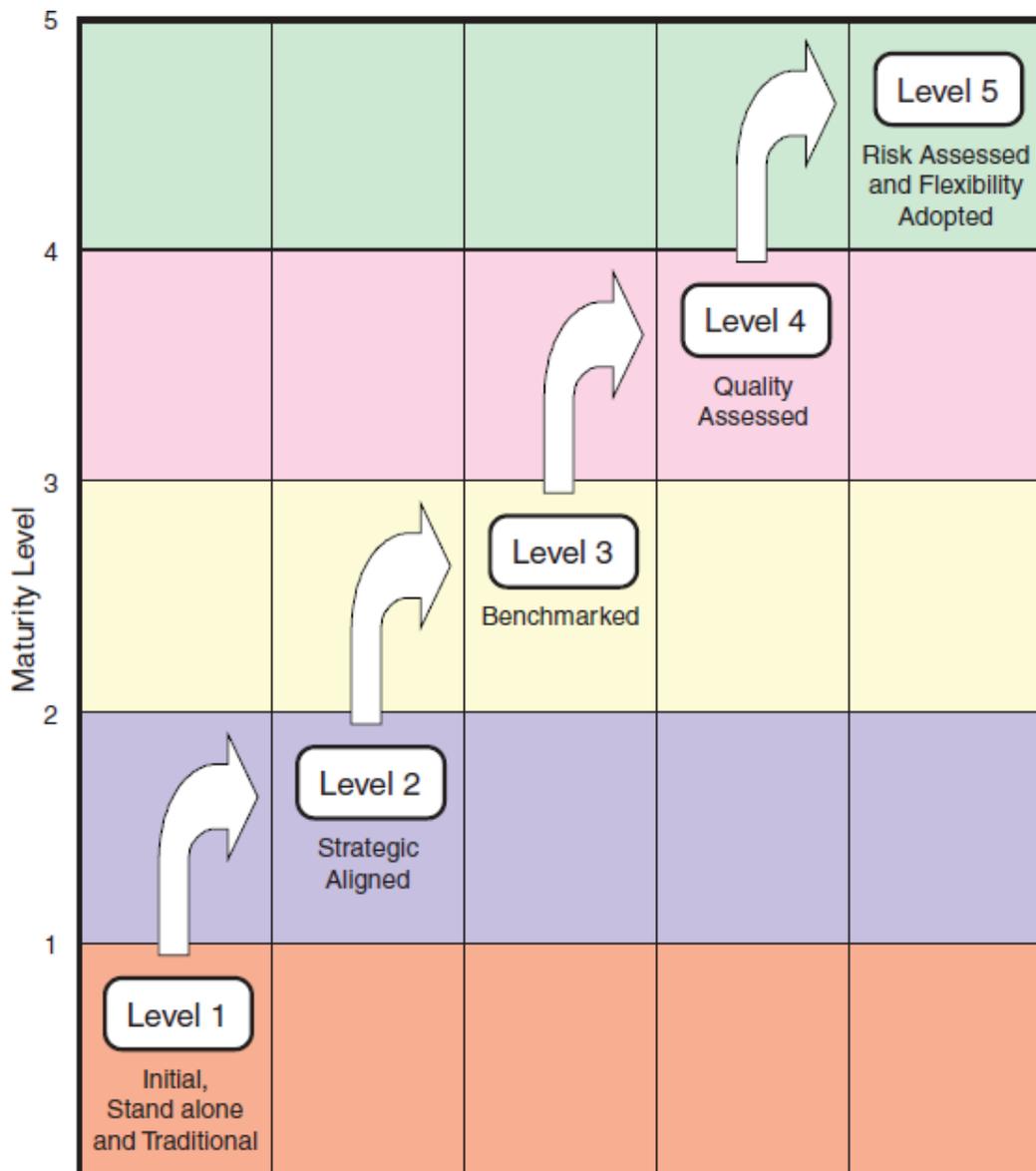


Figure 7.5: Enterprise Performance Management System Maturity Model
 (Source: Adapted from "Enterprise Performance Management Maturity: Conceptual Model and Research Issues", Akhtar, M., Sushil and Mittal R.K. (2010), *Management and Change*, Vol. 14, No 2.

to reduce cost of risks to the business. Various types of flexibilities provide lot of opportunity to the business and appropriate types of flexibilities are to be incorporated which improves EPMS effectiveness in driving performance benefits to organizations implementing EPMS.

In the proposed macro model (refer Figure 7.1), strategy (strategy planning, strategy implementation), and flexibility (strategic flexibility and information system flexibility) are major predictors of enterprise performance management system effectiveness i.e. higher level of maturity of EPMS.

The suggested EPMS maturity model needs further empirical studies in depth so that it becomes useful tool in assessing the maturity level of EPMS.

7.5 Key Implications and Implementation Issues

It has been brought out clearly through the validated model that enterprise performance management system is an integrated model encompassing strategy planning, strategy implementation, strategic flexibility, EPMS design, performance reporting and feedback, IS flexibility and EPMS implementation issues and these have direct influence on EPMS effectiveness in driving performance improvement of enterprise. EPMS effectiveness has been measured on six dimensions such as strategic alignment, strategic monitoring, financial, customer, internal business process and learning and growth perspectives. EPMS implementation issues have come out as driving predictors of EPMS effectiveness and therefore, it should be given top priority in EPMS implementation so as to make it successful in measuring and managing performance in organization. Implementation guidelines emanated out of the study are enumerated below:

- (i) EPMS should be designed as an integrated system and not a standalone tool.
- (ii) It should integrate with macro and micro predictors as recommended in final EPMS effectiveness model.
- (iii) Critical success factors/EPMS implementation issues such as effective implementation strategy, top management support and quality of data flowing into EPMS are major predictors and should be given high priority in EPMS implementation.
- (iv) It should be considered as an improvement tool and its output should become input for various strategies for driving performance improvement in the organization.

7.6 Concluding Remarks

The learning from the survey and case studies as well as subsequent comparison between both researches have been synthesized in this chapter. On the basis of integrated learning, validated model for enterprise performance management system effectiveness has been presented with interpretation of relationships. Also implementation guidelines have been presented to implement effective enterprise performance management system (EPMS).

The study concludes that the organizations intending to implement effective EPMS need to focus on integration of strategy planning, strategic flexibility, strategy implementation, EPMS design, Performance reporting and feedback, information system flexibility and EPMS implementation issues.

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