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ENTERPRISE PERFORMANCE MANAGEMENT INCORPORATING FLEXIBILITY FRAMEWORK: A CASE STUDY OF ONGC, AN INDIAN OIL COMPANY

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ABSTRACT

Enterprise performance management helps organizations achieve their strategic goals. The objective of performance measurement has changed over the past few decades. Traditional performance measures based on financial or productivity are no longer appropriate in today's competitive global market. Alternative performance measurement systems have been proposed that incorporate variety of performance measures/ key performance indicators (KPI).

Many researchers tried to develop models focusing on a particular perspective but could not give a comprehensive picture of business performance. These models can be broadly put in two categories i.e. External Performance Measurement Systems such as performance benchmarking and Internal Performance Measurement Systems such as Activity Based Costing (ABC), Management Audit, Budgeting, TQM, Six Sigma, ISO, EVA, European Foundations Business Excellence Model, Skandia's Intellectual Capital Navigator etc.

Most of these Performance Measurement System (PMS) lack in strategic perspective, comprehensiveness and integral view of the business performance.

The next generation of PMS are focused on strategic perspective and tried to incorporate comprehensive view of the business performance such as Balanced Scorecard(BSC) proposed by Kaplan and Norton(1992) and Performance Prism by Neely and Adams.

The concept of flexibility becomes important in response to radical changes taking place in the business. Many types of flexibilities such as external or internal flexibility; strategic flexibility; organizational flexibility (HR, Technology etc); functional flexibility (financial, marketing, manufacturing, operations etc); information system (IS) flexibility may be incorporated.

Performance Measurement System should be integral part of strategic management cycle starting from Vision and Mission statement, strategy definition to review and finally redefining the strategy based on feedback. In this model two types of flexibilities such as strategic and information system flexibility have been incorporated.

The present study intends to analyze enterprise performance measurement system incorporating strategic and information system flexibility in the context of oil sector in India by taking a case study of particular oil company.

Introduction

Performance measurement is the process of assessing progress toward achieving predetermined goals. Performance management is building on that process, adding the relevant communication

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and action on the progress achieved against these predetermined goals.

Enterprise Performance Management System **(PMS)** is a set of processes that help businesses discover efficient use of their business units, financial, human and material resources. It describes all of the processes, methodologies, metrics and system needed to measure and manage performance of the organisation. It should be used as a strategic tool of learning and enabling to better understand what drives values creation in the enterprise.

Enterprise performance management helps organizations achieve their strategic goals. The objective of performance measurement has changed over the past few decades. Traditional performance measures based on financial or productivity are no longer appropriate in today's competitive global market. Alternative performance measurement systems have been proposed that incorporate variety of performance measures/ key performance indicators (KPI).

The objective of performance measurement has changed over the past few decades. Traditional performance measures based on productivity are no longer appropriate or representative of the information needs of today's competitive global market. Various alternative performance systems have been proposed. Review of various performance measurement system revealed that the limitations of traditional approaches to performance measurement have brought many emerging trends in performance measurement system development in order to produce world-class enterprise performance.

The next generation was to design a system of Performance Measurement. Many researchers tried to develop a model focusing a particular perspective and it could not give a comprehensive picture of business performance. These models can be broadly put in two categories: External such as Performance Benchmarking and Internal such as Activity Based Costing (ABC), Management Audit, Budgeting, TQM, Six Sigma, ISO, EVA, Business Excellence Model, Skandia's Intellectual Capital Navigator etc.

Most of them lack in strategic perspective, comprehensiveness and integral view of the business performance. Next generation of PMS was focused on strategic perspective and tried to incorporate comprehensive view of the business performance such as Balanced Scorecard(BSC) proposed by Kaplan and Norton(1992) and Performance Prism by Neely and Adams(1998).

Performance Measurement System incorporating Flexibility **(FPMS):**

Globalisation has created competition and uncertainty which has put increased pressure on organizations to adapt rapidly and perform at high levels in turbulent environments. The enterprise environment is constantly changing and therefore flexibility adoption becomes imperative. PMS should therefore incorporate flexibility particularly strategic and information system flexibility to become dynamic.

Performance Management is a complete cycle from strategic planning, strategy implementation, performance measurement, analysis and feedback to strategy planning.

Research Objective

Specific objectives of the study are as follows:

1. To asses effectiveness of the Performance Measurement in driving improvements in the organizations.
2. To assess the Strategic and Information System Flexibility in the organization and its correlation in Performance Management.

Review of Literature

Performance Measurement and Management

The traditional performance measurement were based on financial and cost parameters, which did not give true picture as to how enterprise business is moving and lack strategic focus. Hayes and Abernathy (1980) said that system designed for external reporting are heavily financially biased and not correctly used to manage enterprise. Skinner (1974): There should be strategic focus and competitive availability. Cross and Lynch (1991) proposed a structure of measures that permeate through the organization's hierarchy in order to integrate performance.

The other measures of quality, efficiency, productivity, market share, customer satisfaction, innovation, employee satisfaction known as leading indicators are more important which drive performance of enterprise. Many researchers have come out with various leading indicators to be considered in Performance management.

Chakravarthy, BS (1986): In measuring strategic performance, traditional financial measures are inadequate for evaluating enterprise performance. He suggested two other measures such as stakeholder satisfaction and quality of enterprise transformation. Sink and Tuttle (1989) said that performance of an enterprise is a complex inter-related between seven criteria related to Effectiveness, Efficiency, Quality, Productivity, Quality of Life, Innovation and profitability. They suggested four areas to focus on: Performance improvement planning, Measurement and Evaluation, Improvement and Control and cultural support system. Eccles RG (1992) said that the leading indicators of business performance cannot be found in financial data alone. Quality, customer satisfaction, innovation, market share etc often reflect a company's economic condition and growth prospects better than its reported earnings do. Toni and Tonchia (2001) said that the traditional cost performances (the production costs and the productivity) are kept separate from the more innovative non-cost measures (quality, time and flexibility). To make effective, it should include financial and non-financial measure with greater consideration of human resources. Hayes TL, et el (2002): There is substantial relationship between unit-level employee satisfaction–engagement and these business-unit outcomes. Changes in management practices that increase employee satisfaction may increase business-unit outcomes, including profit.

Performance measurement methodology and tools have been suggested by various researchers. Dixon (1990): Performance Measurement Questionnaire (PMQ) approach to find out strength an weaknesses of currently used in manufacturing performance measurement system. Performance measures used in PMQ were neither related to strategy of organization nor customers. SINTEF (1992): Another Performance Measurement system is TOPP developed by SINTEF (1992) in which 4 methodologies are used: Self-Audit, Extended Audit (experts), Self Assessment and Benchmarking. It reviews performance along 3 dimensions: Effectiveness, Efficiency and changeability.

Kaplan & Norton (1992): Traditional financial measurements (e.g. ROI, EPS etc) provide misleading signals. They proposed a balanced set of measurement consisting of non-financial measures in addition to financial measures called Balanced Scorecard (**BSC)** where performance is measured along 4 dimensions: Financial, Customer, Internal Business Process and Innovation and Learning perspectives. It translates strategy into performance measures and targets and helps focus organisation what must be done to create break-though performance. Kaplan and Norton (2002): Building strategy focused organisation with BSC. To ensure strategy gets implemented, five principles of a strategy focused organisation to be followed: (i) Translate strategy to operational terms by strategy mapping and showing cause and effect linkage between

measures. (ii) Align organisation to strategy: Strategy should align with resource, departments and business units. (iii) Make strategy everyone' everyday job: Its communication of organisation vision to everyone. It should be done by creating strategic awareness, align personal objective to and incentive compensation into organisation plan. (iv) Make strategy a continuous Process: Strategy to be ongoing and never ending process. The budgeting process to be linked with strategy. (v) Mobilise change through executive leadership: Senior executives through leadership to drive transformation. A survey result of 500 responses, only 15% showed breakthrough results as they have made BSC as integral part of strategic planning processes.

Neely & Adams(1998) conceptualized a Performance Prism framework which depicts the measurement as the process of gathering management intelligence. Performance Prism is a 3-dimensional model having 5 facets for delivering stakeholders value. Facets are: (i) Stakeholders Satisfaction: Who are stakeholders and their needs. (ii) Strategies: What strategy to be adopted to satisfy stakeholders needs. (iii) Processes: What are the required process to execute these strategies. (iv) Capabilities: What capabilities needed to operate and enhance these processes.(v) Stakeholders Contribution: What stakeholders' contributions are required to develop and maintain these capabilities.

Some researchers have studied the effect of PMS implementation, causes of success and failures. Martinez and Kennerley (2005) studied PMS in Energy company in Europe and found that it has mix positive and negative effects of PMS. Eight positive effects of PMS are: Focus on important aspects, business improvement, improve customer satisfaction, increase productivity, alignment of operation with strategy, improve employee satisfaction, continuous improvement culture and improve company reputation. On the other hand seven negative effects are: time consuming, considerable investment, bureaucratic, over-complicated measures, misleading prioritization, mechanistic and monotonous. Ittner CD and Larcker DF (2003) have studied more than 60 service and manufacturing companies and discovered that only few companies are able to achieve benefits of non-financial measures. The main reason are: Measures not linked to strategy, cause and effect relationship not validated, right performance target not set and measuring incorrectly i.e. statistical validity and reliability of metrics.

Strategic Flexibility

Bititci US, Turner T and Begemann C (2000) proposed a Dynamic Performance Measurement Systems. External and internal environment of an enterprise is not static but is constantly changing. They suggested an external environment monitoring system, internal environment monitoring system, a review system to decide internal objectives and priorities and an internal deployment system to deploy the revised objectives and priorities to critical parts of the system. Sushil (2005) describes the flexible strategy framework to management continuity and change in the industry as large number of leading enterprises are facing tremendous turbulence. Continuity forces such as customer base, infrastructure, technology, core competence, culture etc and change forces such as globalization, competition, new opportunities, customer needs, new technology, merger and acquisition and government policies etc.

Information System Flexibility

Gebauer J and Schober F (2005) studied the information system flexibility and the performance of business processes at length. Presented a decision model to guide the investment in two types of information system flexibility (1) flexibility to use such as system functionality, data base, user interface and processing capacity and (2) flexibility to change such as technical staff availability, system integration, use and upgrade of the information system etc. Other business process characteristics of uncertainty, variability and time-criticality were also taken

into consideration in the model objective to minimise overall investment and operational costs of the information system throughout the system lifetime.

Research Methodology

Performance Measurement System should be integral part of Strategic Management cycle starting from Vision and Mission statement, Strategy definition to Review and final step refine Strategy based on Feedbacks. In this model two types of flexibilities such as Strategic and IS flexibility have been incorporated.

Based on research objectives, research hypothesis have been designed. Accordingly, research questionnaire has been prepared and pilot tested. Primary data is collected through Questionnaire survey. Six-point scale (1: strongly disagree to 6: strongly agree) has been adopted in the Questionnaire. The questionnaire has been distributed in paper format personally to all respondents in an oil company in India and collected later. Out of 150 questionnaire, 48 have responded so far.

The Research Hypothesis being tested are that Effectiveness of Performance measurement is influenced by (1) Extent of Strategic Planning (2) Effective Strategy Implementation(3) Comprehensiveness of PMS Design (4) Effective Performance Feedback Mechanism (5) Strategic Flexibility (6) Information System Flexibility (7) PMS Management issues.

Data Analysis and Interpretation

The questionnaire data of 48 respondents received. Univariate analysis was done for PMS Macro variable and its mean on 6-point scale and standard deviation are given in Table-1 below.

Table-1: PMS Macro Variables, 6-Point Lickerd scale

S. No	PMS Macro Variables	PMS Macro Variables Description	Mean (6-point scale)	Std Devia-tion
1	**SP**	Strategy Planning	4.67	0.74
2	**SI**	Strategy Implementation	4.52	0.70
3	**SM**	Performance Measurement System Design	4.13	0.85
4	**PA**	Performance Analysis and Feedback Mechanism	4.34	0.86
5	**SF**	Strategic Flexibility	4.69	0.68
6	**IF**	Information system Flexibility	4.48	0.84
7	**MI**	PMS Management Issues	4.10	0.90

From the above Table-2, it is evident that all the 7 PMS Macro variables have standard deviation less than 1, which gives enough confidence in mean value as indicative data.

PMS Effectiveness

It is how effectively the performance of an enterprise is being measured and managed. In our case study, PMS effectiveness has been studied from six perspective:

- Strategic Alignment(**ESA**)
- Strategic Monitoring(**ESM)**
- Strategic Objective Attainment-Financial Perspective(**EOF**)
- Strategic Objective Attainment-Customer Perspective(**EOC**)
- Strategic Objective Attainment-Business Process Perspective(**EOB**)
- Strategic Objective Attainment-Learning and Growth Perspective(**EOL**)

Factor analysis has been carried out for PMS effectiveness variable. Factor ESA has 4 variable, ESM 6 variables, EOF 5 variables, EOC 5 variables, EOB 10 variables and EOL 7 variables. All the 6 Effectiveness Factors with their variance are given in Table-2.

Table-2: Factor Analysis of PMS Effectiveness Variables

S. No	PMS Effectiveness Factor	PMS Effectiveness Factor Description	PMS Factor Variance
1	**ESA**	Strategic Alignment	87.64 %
2	**ESM**	Strategic Monitoring and Decision Making	77.83 %
3	**EOF**	Financial Objective Attainment	83.42 %
4	**EOC**	Customer objective Attainment	88.36 %
5	**EOB**	Business Process objective attainment	75.08 %
6	**EOL**	Learning and Growth objective Attainment	80.97 %

The PMS Effectiveness Factors' variance is high, which means that they are able to measure the underlying variables very effectively.

A correlation analysis between 7 PMS Macro variables and 6 PMS Effectiveness Factors has been carried out to prove the hypotheses and the result are placed in Table-3 below.

Table-3:Correlation between PMS Macro Variables and PMS Effectiveness Factors

	ESA	ESM	EOF	EOC	EOB	EOL
SP	0.177	0.387 **	0.427 **	0.338 *	0.324 *	0.320 *
SI	0.461 **	0.616 **	0.626 **	0.557 **	0.586 **	0.627 **
SM	0.793 **	0.832 **	0.757 **	0.681 **	0.747 **	0.729 **
PA	0.685 **	0.667 **	0.640 **	0.518 **	0.607 **	0.619 **
SF	0.702 **	0.651 **	0.748 **	0.657 **	0.652 **	0.761 **
IF	0.782 **	0.826 **	0.753 **	0.697 **	0.770 **	0.778 **
MI	0.906 **	0.888 **	0.818 **	0.774 **	0.848 **	0.873 **

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table-4 shows the strong Correlation between PMS Macro variables and PMS Effectiveness Factors with two star (**) except Strategic Planning Macro Variable having one star(*) correlation with EOC, EOB and EOL and no star with ESA i.e. strategic planning is not well integrated in PMS cycle. PMS Design(SM) and PMS Management Issues (MI) have come out with very strong correlation (0.75 and above) with all 6 PMS Effectiveness factors i.e. well designed PMS and PMS management will lead to effective PMS for the enterprise. Strategic Flexibility shows a correlation of 0.76 with EOL i.e. it is futuristic and leading to learning and growth in the organisation under study. Information system Flexibility (IF) has a high correlation of 0.826 with ESM i.e. it is helping in effective Strategic monitoring and decision making.

Conclusion and Recommendation

The results of the research study shows very positive results on the expected lines. In the organisation under study, Strategy implementation, PMS design, Performance analysis and feedback mechanism, Strategic flexibility, Information system flexibility and PMS management issues are strongly correlated with all PMS Effectiveness variables while strategic planning is not well integrated with PMS management, which should be done to give better results of PMS to the organisation under study.

The study suggests that all the hypothesis are found to be true i.e. effectiveness of Enterprise PMS is dependent/strongly correlated with extent of strategy planning, effectiveness of strategy implementation, comprehensiveness of PMS design, Performance analysis and effective feedback

mechanism, Strategic flexibility, IS flexibility and PMS management issues.

Limitations of the Research

The research is limited to one organisation due to time constraint. To get a clear and broader picture of PMS in oil industry, the research should be extended to more oil companies. The management issues affecting PMS implementation and its benefits have not been analysed in detail. It would then be possible to indicate the reasons for effective PMS implementation.

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