

KPI AS A TOOL TO CONSOLIDATE INTERNAL MANAGEMENT COMPETENCE - PRACTICE AT PVEP

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Summary

The article introduces the key performance index (KPI) system on its way to application in the Petrovietnam Exploration Production Corporation (PVEP). The paper provides comprehensive information with regard to KPI measurement, the implication behind indices related to business administration, alongside procedural steps to be taken. Factors supposedly contributing to work and budget performance management are also considered and presented.

Key words: KPI, weight, standard point, target, index, business plan.

1. Introduction

Key performance index (KPI) has been widely used in business management for a long time with various modifications and adjustments to suit the actual needs of companies. At PVEP's head office, the KPI system is understood as the indices used to measure and assess the quality of implementation of the annual business plan assigned and delegated to PVEP's divisions, branches, and working teams (commonly understood as functional units). The indices also measure the efficiency of quality management, work progress, and budget control as well as efforts to improve the administrative competence of in-charge managers, which are indirectly a tool to improve PVEP's development.

PVEP's KPI system was first developed and implemented in 2012 but has not yet been formalised. The system basically creates a non-metric evaluation of the performance of the annual business plan delegated by Vietnam Oil and Gas Group - the holding company, or by PVEP's Board of Directors and Management Board. The system is not a comprehensive tool that addresses every corner of the Corporation's business performance, nor does it cover the time dimension, i.e. short-term and long-term targets for administrative efficiency. In addition,

there are neither specific guidelines for measuring indices nor any constructed formula for index calculation. Simply, one can look at the annual assessment report to see whether the targets set and assigned since the beginning of the business year have been accomplished.

From the above facts, PVEP's Management realises that KPI assessment applied in PVEP needs to be standardised through detailed study, methodology build-up, data collection and calculation to enable appropriate rating among divisions, branches and working groups of different disciplines, under an overall umbrella of internal management competence. In turn, the rating will allow an accurate reflection of work/budget efficiency, business administration as well as internal management improvement.

Developed from a dataset collected through a company-wide survey covering responses from all divisions, branches and working teams of PVEP, the KPI questionnaire is conducted every quarter or every year depending on management purposes. In that manner, KPI is expected to fully reflect PVEP's image in every walk of its business, represented by the responsible subordinate units.

The KPI system is not intended for pure scientific research or to applaud/criticise divisions with high/low KPI. Instead, it is a tool for the Management to look into the root causes and to clarify internal and external reasons



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shaping the management practices, to present the work and budget performance in figures, to explain why at the end of the business year some units can accomplish tasks planned and assigned at the beginning of the year while others cannot.

With the evaluation results reported to PVEP Management periodically, KPIs are expected to be a useful information source to help find bottlenecks in internal business administration, and thereby to have appropriate solutions to improve management and execution efficiently.

2. Methodology

2.1. Focal point

The KPI system is used for PVEP's annually assigned business plan assessment and applied for PVEP headquarters' divisions, branches and working teams. The system (as well as the plan assignment and assessment) is constructed and conducted by PVEP's Planning and Investment Division as the focal point. Data controllers and data analysts from PVEP headquarters' divisions also collaborate to fulfil the planning and assessment process.

2.2. Approaches

The KPI system applied at PVEP includes 10 targets, equivalent to 10 groups of indices and sub-indices, which are selected using samples from interdisciplinary information covering key factors of the annual business plan and effectively reflecting the Corporation's administration improvement.

With the 10 targets (listed in the content of assessment in Table 1), there are approximately 130 indices used for KPI construction. Details of indices and sub-indices are displayed in the past-year KPI assessment forms and additional indices supporting and interpreting the 10 groups.

2.3. Basis for selection and construction of indices

- A thorough review of the effective legal framework;
- A comprehensive study of the feasibility of indices applied in PVEP:
- + Measurable indices that have been in place and systematically applied, including the indices of production, finance, investment, and labour targets as assigned in the annual business plan;
- + Quantitative indices that have not been

appropriately in place and systematically applied: to be collected through the survey (designed online quiz);

- + New qualitative indices: to be quantified for measuring purpose through the survey (online quiz) and using dummy variables.
- An out-and-out study on differences among concepts, calculation methods, application period, and application coverage of each index.
- Contribution from PVEP's Management and PVEP's divisions/branches/working teams.

2.4. Key rules

- Procedures for KPI construction used to assess the annual business plan performance of PVEP headquarters' divisions/branches/working teams need to reflect the Corporation's internal management targets.
- The index system measuring and assessing business execution and management quality is based on the assigned functions and responsibilities of PVEP's divisions/branches/working teams, the efficiency of quality control, work progress and budget supervision of each unit as well as efforts spent on management efficiency improvement of responsible managers.
- The KPI system includes 10 general targets and 130 indices to be approved by PVEP's Management.
- Indices measurement combines three dimensions to resolve conflicting viewpoint problems: PVEP Management's assessment, units' self-assessment, and units' cross assessment.
- Internally applied PVEP's KPI system needs to ensure:
 - + Compliance with the Ministry of Planning and Investment's guidance on constructing statistical indices, and Petrovietnam's Regulation on annual business plan assignment and assessment of annually assigned business plan performance of subsidiaries;

+ Compatibility, comparability, and applicability of current systems of indices in Vietnam such as the provincial competitiveness index (PCI) conducted by the Vietnam Chamber of Commerce and Industry (VCCI) and the United States Agency for International Development (USAID); the Vietnam provincial governance and public administration performance index (PAPI) conducted by the Centre for Community Support and Development Studies (CECODES), the Centre for Research and Training

Table 1. Assumption of weights identified for each index target/group of the KPI system

Target/ group of indices	Content of assessment	Weight			
		Divisions: Exploration, Subsurface, Development, HSE- R&D, Planning & Investment, Petroleum Asset Management, Finance & Accounting, Human Resource Management, Administration	Legal & Compliance Division	PVEP ITC, PVEP Ho Chi Minh	Foreign branches
I	Annual business plan (work and budget) is efficiently constructed, executed, and supervised.	45%	-	-	-
II	Annual work plan is accomplished with proper progress (work progress is scheduled at the beginning of the business year and assigned by PVEP CEO's decision)	15%	20%	20%	20%
III	Annual budget plan is accomplished with proper cost-saving (cost-saving target is projected at the beginning of the business year and assigned by PVEP CEO's decision)	5%	10%	10%	10%
IV	PVEP's Management gets stress-free and smooth access to information and data sources of their in-charge discipline(s).	5%	10%	10%	10%
V	Internal management within each divisions/branches/working teams is transparent; information is issued through the system of corporate-level procedures/regulations/guidance and instruction; the regulatory compliance is assessed by ISO Department.	5%	10%	10%	10%
VI	Specific measures are executed to push authorities of various levels to pass/approve PVEP's submission	5%	10%	10%	10%
VII	Time allocated for administrative procedures is efficient and adaptive to deadlines assigned by PVEP's Management	5%	10%	10%	10%
VIII	Annual training and G&A cost-saving targets are accomplished in line with the division's annual work and budget assigned by the CEO	5%	10%	10%	10%
IX	Managers of divisions/branches/working teams are dynamic and creative in problem solving in co-operation with other PVEP divisions and relevant authorities	5%	10%	10%	10%
X	Managers of divisions/branches/working teams are able to have efficient management of internal human resources to contribute to PVEP's human resource development, presenting through internal training assessment and personal assessment form	5%	10%	10%	10%
Total		100%	100%	100%	100%

of the Vietnam Fatherland Front (VFF-CRT) and the United Nations Development Programme (UNDP);

+ Feasibility and synchronisation with PVEP's other systems of indices which are already in place and systematically applied including key tasks and KPI assigned to PVEP petroleum projects' chief representatives, PVEP's legal representatives and PVEP's Management Committee members.

2.5. Targeted users

PVEP's management and PVEP headquarters' divisions/branches/working teams within their functional competencies as assigned by PVEP's Board of Directors.

2.6. KPI content and indicators

- PVEP's list of KPIs includes index numbers, target codes, target contents/names, groups of index codes, index codes, sub-index codes, and assessment terms.
- Content of PVEP's KPIs includes the concept, calculation method, key classification, report time interval; sources of information; and divisions/branches/working teams responsible for data collection.

2.7. Index construction

The KPIs are constructed in a three-step sequence: (1) collect data through different channels; (2) calculate

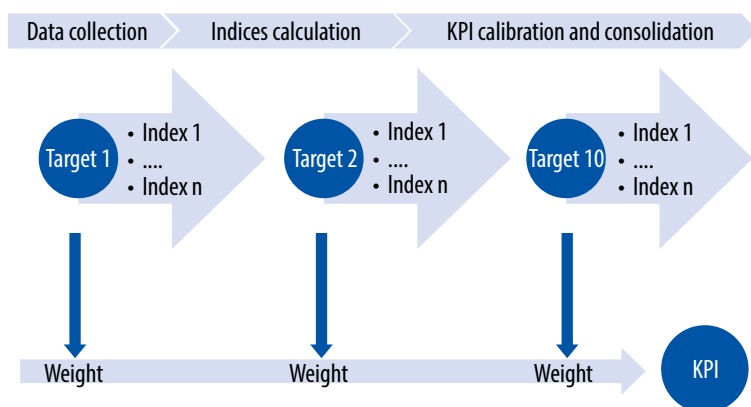


Figure 1. The flowchart of KPI assessment.

10 sets of indices; and (3) adjust the composite KPI as the weighted mean of 10 indices with a maximum score of 100 points. The flowchart is shown in Figure 1.

Step 1: Survey, data collection:

Data used for KPI construction consist of 2 groups:

(i) The first one is collected from survey and assessment of PVEP's Management and division managers' self-assessment and cross-assessment;

(ii) The second is collected from various sources such as periodic comprehensive/consolidated business reports, headquarters' periodic internal work and budget reports, ISO assessment reports, and actual data provided by relevant units.

The purpose of data collection through these two channels is to combine and develop a comprehensive dataset reflecting interdisciplinary viewpoints and make the final KPI set an image composed of different angles of management.

Step 2: Calculation of 10 index sets:

The KPIs are calculated as the weighted means of 10 groups of indices (equivalent to 10 targets) with a maximum score of 100 points. Therein, indices are composited based on the weighted mean of sub-indices using a standard 10-point scale. For targets with extremely high performance, the benchmark is set to 5 for balance effect.

Regarding proportional indices, the higher the calculated indices are, the more efficient the management quality is.

Regarding inversely proportional indices, the higher the calculated indices are, the less efficient the management quality is.

There are 2 types of indices: regular indices that are assigned in the decisions on annual comprehensive/consolidated business plan assignment and the decisions on annual internal work and budget plan assignment; irregular indices that are purposely adjusted

depending on the business targets of the relevant business year.

Step 3: KPI calibration and consolidation

In this step, each group of indices is assigned a weight representing the contribution and importance of the indices.

2.8. Who is responsible for answering annual surveys and making assessments?

- Members of PVEP's Management Board are responsible for answering annual surveys and making assessments in compliance with their disciplinarys and responsibilities.

- Managers of divisions/branches/working teams are responsible for self-assessment of their in-charge units and cross-assessment of other units.

2.9. KPI questionnaire

Within KPI assessment time intervals, questionnaire templates are attached to the relevant year KPI system. Annual questionnaires are continuously adjusted and complemented with necessary contents that are adaptable to annual business targets and mid/long-term management targets. The system of indices also needs to be closely linked with the decision on comprehensive/consolidated business plan assignment and the decision on internal work and budget plan assignment of the relevant year.

Depending on substantial changes of the petroleum industry or PVEP's target adjustments, questionnaire templates will be sent for data collection. After consultancy, demonstration surveys and suitable adjustment, correction or elimination can be made depending on the actual conditions at the time of KPI assessment.

2.10. PVEP's management assessment questionnaires

The questionnaires used for PVEP's Management consist of questions relating to work execution and budget control in order to fulfil PVEP's annual business targets. Besides,

the questionnaires also aim at collecting assessments and best practices of PVEP's Management during their plan execution and interactions within the assigned authorities.

2.11. Self-assessment and cross-assessment

The questionnaires used for managers of PVEP divisions/branches/working teams are designed for:

- (i) Self-assessment of the deployed activities via questions relating to actual working performance at the in-charge units;
- (ii) Cross-assessment by the in-charge units with regard to their collaboration with other units.

2.12. Weight identification assumption

Based on the KPI construction and assessment, the indicators that have to be accomplished in the business year are assigned with bigger weights, especially ordinance indices, quantity indices, production indices, financial indices, and investment indices. Indicators representing management and execution quality of functional units, which are supposed to improve gradually on a long-term basis instead of instant efficiency, are assigned with smaller weights.

Assumption of weights identified for each index target/group of the KPI system is shown in Table 1.

Within each target/group of indices, the weight of an index is determined based on its importance and influence on the whole target/group.

The formula for calculating the weighted KPI is as follows:

Weighted KPI = (Target 1 × weight 1 + Target 2 × weight 2 + ... + ... Target 10 × weight 10)

2.13. Collecting KPI data

Online quiz:

- Questionnaires are digitalised on Microsoft Form (Figures 2 and 3);
- Questions are responded by PVEP's Management and managers of divisions/branches/working teams;
- Samples are collected by PVEP's Planning and Investment Division;
- Survey data are exported to Excel for calculation and analysis.

Online data collection:

- Annual KPI reports are posted on PVEP's intraweb.
- Internal users can log in and make use of the needed data.

3. Reporting procedures

KPI reports are made quarterly/annually, at the end of each quarter/year or subject to PVEP Management's demand. The flow chart presenting KPI construction and assessment is shown in Table 2.

4. Implication of the KPIs

As mentioned above, the KPI system includes 10 index groups (namely 10 targets in certain contexts) covering key sectors of internal business management. The use of these 10 index sets is to reflect the management quality of PVEP's divisions/branches/working teams known as functional units).

Implementation of each target is quantified, measured, and controlled by the system of indices and sub-indices, including:

4.1. Targets/groups of indices

4.1.1. Target 1. Annual business plan (work and budget) is efficiently constructed, executed and supervised

Target 1 comprises 40 quantitative indices and sub-indices. Target 1 is presented in the form of indices in the annual business plan assigned by Petrovietnam, or by PVEP's Board of Directors and Management Board, comprising:

- Production plan: 14 indices;
- Financial plan: 20 indices and 7 sub-indices;
- Investment and budget plan: 10 indices and 17 sub-indices;
- Labour plan: 5 indices.

Target 1 reflects PVEP's comprehensive/consolidated business management efficiency as well as indirectly mirrors the Corporation's foothold in the entire system of Petrovietnam's activities and the national economy.

4.1.2. Target 2. Annual work plan is accomplished with proper progress; work progress is set at the beginning of the business year as assigned in PVEP CEO's decision

Table 2. KPI construction and assessment

Division in-charge	Process	Description
Planning and Investment Division	KPI system construction	
PVEP's Management	Annual KPI approval	Approval of the annual KPI system based on the decisions of annual business plan/internal work and budget plan assignments.
Planning and Investment Division	Questionnaire design	
PVEP's Management	Consultancy	The Planning and Investment Division makes appropriate adjustment.
PVEP's Management and managers of functional units	Questionnaire feedback	Respondents answer Online Quiz sent out by the Planning and Investment Division.
Planning and Investment Division	KPI calculation and grading	The Planning and Investment Division calculates corresponding KPIs of each unit.
Planning and Investment Division	Result report to PVEP's Management	The Planning and Investment Division publicises the annual KPI report.

Target 2 comprises 13 quantitative indices and annually customised indices. The customised indices are constructed based on the internal work and budget plan assigned annually by PVEP's Board of Directors and Management Board.

Accomplishment of work items is calculated and measured based on the percentage of the achieved progress versus the planned progress. Cost estimation at the time of assessment compared to that at the beginning of the business year is also an applicable measure in contingent cases.

Target 2 reflects PVEP's business management efficiency through work progress accomplishment (and cost performance in certain contexts) assigned to every functional units. Comprehensively, Target 2 assessment corresponds to PVEP's internal business management efficiency based on the annual internal work and budget plan.

4.1.3. Target 3. Annual budget plan is accomplished with proper cost saving; cost saving target is projected at the

beginning of the business year and assigned by PVEP CEO's decision

Target 3 is composed of 10 indices and 9 sub-indices, all are quantitative. Target 3 is used to redirect PVEP's internal cost control quality to accomplish the annual business plan.

Indices are calculated based on per capita basis, the purpose of which is to represent the cost effectiveness of the Corporation's human resources. Through the years, after excluding inflation and force majeure causes, the cost control trend will be reflected by annual statistics of this group of indices.

4.1.4. Target 4. PVEP's Management gets stress-free and smooth access to information and data sources of their in-charge discipline(s)

Target 4 consists of 10 indices. These indices describe the access of PVEP's Management to specific information of their relevant in-charge discipline(s). Equal access, up-to-date and predictable information in regulatory

compliance, and document publicity are also considered. Qualitatively, target 4 is quantified based on a 5-graded scale depending on data transparency and management adaptability.

Target 4 is the most important factor to reflect if a functional unit's information environment is convenient for PVEP's Management.

4.1.5. Target 5. Internal management within each division/branch/working team is transparent. Information is issued through the system of corporate-level procedures/regulations/guidance and instructions, of which regulatory compliance is assessed by ISO Department

Target 5 is composed of 8 qualitative indices indicating PVEP's and functional units' internal regulation control system.

Target 5 is quantified based on a 5-graded scale depending on their corresponding level to management purposes of a workitem or a legal document. Those include regulatory impact assessment before issuance, regulation framework management in line with PVEP's divisions/branches/working teams' functions, accountability, and internal apparatus. Apart from that, regulatory compliance assessment and supervision as well as updates necessary for actual business circumstances are also observed. Minor/major errors identified by independent ISO auditors are also accounted for.

Target 5 reflects business management excellence through the regulatory system manipulating specialty and administration relations as well as legal compliance in PVEP and among divisions/branches/working teams.

4.1.6. Target 6. Specific measures are executed to push authorities of various levels to pass/approve PVEP's submission

Target 6 consists of 11 indices measured by dummy variables (yes/no answer). The 5-graded scale is used to classify the superiority of electronic tools application. Target 6 also measures the percentage of the assigned task accomplishment/percentage of inbound and outbound documents/duties resolved by the functional units. The measurement helps display the effectiveness of work control and work capacity through multidimensional relations to authorities of various levels, Petrovietnam and PVEP's subsidiaries and petroleum project operators.

Target 6 also reflects the interaction and internal work

promotion inside PVEP and among PVEP's functional units.

4.1.7. Target 7. Time allocated for administrative procedures is efficient and adaptive to deadlines assigned by PVEP's Management

Target 7 measures the ability to meet progress and deadlines required by various authorities or PVEP's Management. The group of indices is measured on a 5-graded scale reflecting the importance of the assigned duties/tasks.

Target 7 therefore relays solutions for work completion competence.

4.1.8. Target 8. Annual training and G&A cost-saving targets are accomplished in line with the division's annual work and budget assigned by the CEO

Target 8 is composed of 8 qualitative indices, representing the percentage of training cost and G&A cost-optimised over a business year compared to the planned target at the beginning of the year on a functional unit basis.

Target 8 represents the cost control efficiency of PVEP's divisions/branches/working teams in particular and the entire Corporation in general.

4.1.9. Target 9. Managers of divisions/branches/working teams are dynamic and creative in problem solving in co-operation with other PVEP divisions and authorities

Target 9 consists of 6 qualitative indices that replicate 6 key factors quantified by a 5-graded scale on adaptability to management demand. Target 9 implies the equal and co-operative interaction among PVEP's divisions/branches/working teams.

Target 9 is the only one that is measured multidimensionally through assessment channels of PVEP's Management, self-assessment of PVEP's divisions/branches/working teams, and functional units' cross-assessment of their counterparts. Statistics from these three groups are used as input for calculation.

4.1.10. Target 10. Managers of divisions/branches/working teams are competent in managing their personnel, which in turn contributes to PVEP's human resource development, presenting through the internal training assessment and personal assessment form

Target 10 comprises 10 indices, mostly qualitative, which are quantified through grading scale. This group of indices mirrors the level and quality to which disciplinary training and specialty development are carried out by the functional units to support the Corporation's business. Being an annual assessment indicator, Target 10 is a long-term rather than an instant efficiency indicator of the assessed year.

4.2. Data and data sources

- PVEP's Investment and Planning Division continues to collect and filter indices with in-place data by designing surveys, report templates and documentary sources (assignment documents of various levels of authorities) for statistical purposes.

- PVEP's Investment and Planning Division studies, scrutinises and develops new indices based on new data sources for management purposes;

- IT applications need to be promoted in data collection and analysis (statistics collection through available tools such as database systems, Edoc, online quiz, etc.).

5. Conclusion

Performance management is the key factor for an enterprise to check whether they are going in the right direction and achieving their targets in terms of their pre-set objectives and goals. To manage the performance, managers are required to know about the performance indicators and continuously monitor them. This paper explores the key performance indicators (KPIs) applied in PVEP and predicts their impact on the overall business performance. The data used for KPI assessment is collected from the top-level management of PVEP and the functional units via a structured questionnaire. Applying the KPI system is an effort to measure the performance in terms of cost, finance, quality, time, flexibility, delivery reliability, safety, and top managers' satisfaction indicators and their impacts on PVEP's overall business. This paper puts together all important performance indicators used by PVEP in a single list and checks their impact on the overall performance of each division/branch/working team.

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