KPI PERFORMANCE INDICATORS FOR EVALUATING
EMPLOYEES ON INDUSTRIAL PRODUCTION LINES

Stan, L.; Mărășcu - Klein V.; Neagoe, L. & Tecău, A

Abstract: The article analyzes the performance indicators-KPI which represents the focal point that can make the transition from the development of individual activity to overall organizational performance in the industrial enterprise. Benefits performance indicators - KPI's are represented by forecasting revenues and they capitalize the opportunities in industrial production lines, they minimize risks of non-imposed standards, improving the overall decision about the risks of supply interruption as an interactive dash board and ability to manage the portfolio of suppliers, to reduce production down time, to increase customer satisfaction and improve profitability by being able to anticipate supply chain risks, evaluation of work force data by examining reports for staff and expenses of industrial companies.

Key words: KPI performance indicators, evaluating employees, production lines, industry

1. INTRODUCTION

In the medium/large sized industrial organizations, a timely and effective evaluation of staff performance through strategic tools, should be able to design an integrated system of key performance indicators (KPI), structured hierarchically at all levels and organically linked with the strategic objectives and tactical organization. [1] Key Performance Indicators (KPI) are performance assessment tools that identify the extent of achieving the desired parameters in the industrial production lines, which is of major importance for the success of the manufacturing company.

2. PURPOSE, NECESSITY, IMPORTANCE OF KPIs

KPIs represent a landmark that helps company employees and managers to understand the relevance of their work and the results to be attained. They can be predefined or chosen by the company management in order to assess the competence and how they assume the individual business goals. If implementation is needed, we see that in 90% of the cases, respondents fully or partially correlated the reward of employee with their KPI results.[5] This leverage leads to a breakdown of discipline in the department-level strategic objectives, teams and individuals and to focus their efforts towards achieving activity performance.

2.1 Benefits of KPI application in the industrial companies

The benefits of indicators KPIs on reports due to the application in industrial companies are:
- They offer a perspective about the documentation and organizational performance indicators
- Success in their use is facilitated by the selection, the degree of alignment with the company internal organizational objectives and a detailed documentation facilitates their understanding and use of standardized company
- Improving the time of response to market changes
- Identifying costs that can be eliminated
- Workforce optimization
- Improving the overall decision compressed into a single dashboard, interactive, due to the risks of supply interruption
- Improved ability to manage the portfolio of suppliers, through the identification, evaluation and monitoring of multiple areas of risk exposure associated to suppliers
- Identifying, predicting future earnings and capitalization opportunities
- Minimizing the risk of non-imposed standards
- Creating a picture of the market by combining the risk management and management strategy
- Reducing production downtime
- Improving profitability by being able to anticipate supply chain risks
- Ad-hoc analysis of forecast scenarios that determine the impact of changing a supplier contract or changing conditions for profitable growth
- Evaluation of labor through dashboards and reports on data related to personnel and the related expenses [8]

2.2 Main stages of industrial development company with KPI

In the scope of developing a customer oriented and efficient organizational culture, the KPI is implemented gradually in the industrial company structures, together with a performance management system, in the following stages:
1. establishing key principles and organizing processes leading to performance
2. team training and training materials
3. organization's training in presentation of the individual role in the performance management system
4. evaluation and certification in real situations of the managers directly involved

2.3 Methods of application of KPIs in manufacturing firms

For a successfully implemented performance management system, effective method must be applied by KPI, as it follows:
- A set of performance indicators KPI which represent a common language between the company departments, depending on: income, cost and quality, adaptable and interconnected
- Identifying periodic verification means which are designed to enable performance monitoring and reporting of all participants in the trial, reporting daily performance panels representing the starting point for the improvement activities [9]

3. GRAPHICAL PRESENTATION OF KPI

Key performance indicators KPIs are measures for the performance of the duties, operations and processes which are essential for the business; performance can be regarded from more perspectives: from a strategic, operational and team perspective. Based on the trends within the company or by benchmarking the KPI’s may be appreciated

Fig. 1. KPI - Key Performance Indicators
Source: Adapted from APQC survey on the performance measure

We also took into consideration the following aspects:
- Comparing the practices used in the performance measurement projects of the
industrial production lines
- Identifying the major difficulties encountered in the industrial projects KPI
- Presentation of key success factors for the KPI projects
- Transferring the insights and experience of the industrial production lines by launching a dialogue between the companies interested in performance measurement indicators.

The study results are highly relevant for the local business environment due to the diversity of respondents as regards the industry to which they belong and the size of their company. Responses were collected from companies of various industries such as: retail, manufacturing, energy and utilities, financial services, pharmacy, food industry, professional services, IT, construction, engineering, etc.
- 76% of the industrial companies surveyed recorded a turnover of more than 12 million RON in 2011, and 79% have over 120 employees.
- The industrial companies in the survey recorded a turnover of EUR 5 billion in 2011 and they had over 50,000 employees.
- 85% of the respondents hold management positions in the industrial companies, thus attaching a representative quality to the expressed opinions.[5]

4. USE OF INDUSTRIAL KPIs IN PRODUCTION LINES

If we refer to the use of key performance indicators on industrial production lines we find that:
- 81% of the industrial companies already use KPIs, and the trend is increasing as another 19% plan to use KPI in the future.
- The main reason for adopting KPI was to follow up the fulfillment of the strategic objectives (75% of respondents), other reasons being the transparent reporting of the results as well as the evaluation of departments and employees, and in 40% of the companies used consultants.

Regarding the intention to implement KPI in the future industrial companies not included in their activities using key performance indicators, the surveys recorded the following results: 42% responded positively, 12% are interested in implementing KPI and 46% don't know.[5]

In terms of the companies understanding and approach, the key performance indicators KPIs percentage ranks on the following levels:

<table>
<thead>
<tr>
<th>No. crt.</th>
<th>Actions</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>degree of use KPIs, trend growth in the future</td>
<td>81%</td>
</tr>
<tr>
<td>2.</td>
<td>the use of individual indicators</td>
<td>74%</td>
</tr>
<tr>
<td>3.</td>
<td>down approach, based on strategic objectives</td>
<td>66%</td>
</tr>
<tr>
<td>4.</td>
<td>degree of use in all departments</td>
<td>31%</td>
</tr>
<tr>
<td>5.</td>
<td>correlation between indicators of different departments</td>
<td>21%</td>
</tr>
</tbody>
</table>

Table 1. Percentage presentation of KPIs based on the actions taken [5]
5. KPI DASHBOARDS APPLICATION BY PERFORMANCE

The strategies used by companies to build stronger links between the performance on industrial production lines and the strategy of using customized or general performance dashboards. [2] Examples can come from a wide range of functional areas and industries, such as human resources, retail, real estate development. On average, an organization that uses a dashboard was able to implement its first dashboard project in 51 days, 60% of the time necessary to the organizations that have used customized dashboard solutions accomplished in 88 days, as shown in chart below: [4]

![Fig. 4. Time used in implementing KPI](source: Aberdeen Group, 2010)

Research results show that companies using dashboard solutions were 45% more likely to have dashboards that can be adapted to the industrial organization of production lines. The natural reaction is the focus of employees on activities to be evaluated. It is essential for the system to measure the activities that lead to fulfilling the objectives. [3]

![Fig. 6. Creating dashboards according to domestic needs](source: Aberdeen Group, 2010)

According to the study industrial organizations using dashboards generated solutions are two times more effective than other organizations that have a business intelligence program (40% vs. 19%). [6] Thus, the industrial organizations applying key performance indicators have a better understanding of the organizational performance as regards the alignment of KPI’s used at an operational level with strategic objectives at a corporate level and an understanding of the overall execution.

![Fig. 7. Applying KPIs in the execution](source: Aberdeen Group, 2010)
The main benefits of pre-built performance dashboards:
- Allowing a faster implementation process
- Are easy to adapt to rapid change
- Are much easier to customize in house, through configuration, not by coding.

7. EXAMPLES OF KPI’s REGARDING THE EVALUATION OF EMPLOYEES

a) **Personnel turnover** - measures the rate at which employees leave the organization in a period of time
   **Variations:** employees who leave the organization in a certain period, employees who left the organization over the past 3 months; age of employees, loyalty; staff turnover

b) **Orders delivered with damaged products** - measures the rate at which orders contain damaged delivered products
   **Variations:** orders damaged frequency of defective deliveries

c) **Income / call completed successfully:** Measures the average income obtained as a result of a successful call.
   **Variations:** average revenue per call ended successfully

d) **Complaints of crew members**
   - Measures the number of complaints made by crew members to employer in a certain period.
   **Variations:** complaints from crew members

e) **The average weekly work / employee**
   - Measures the average number of hours worked by an employee "full time equivalent" (FTE) week
   **Variations:** average work

f) **Time saved thanks to innovations**
   - Measures the time saved by introducing the innovation process.
   **Variations:** hours saved due to innovation

g) **Awards for innovations received by the organization**
   - measures the number of public appreciations for innovation, which the organization receives

h) **Unplanned absenteeism rate**
   - Measures the percentage of days of absence unannounced of the total work days available. Unplanned absences occur when such notification is made in less than 24 hours.
   **Variations:** unscheduled absences [7]

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9. CONCLUSION

The study results confirm the interest of companies in the design, implementation and use of KPIs on industrial production
lines, and the benefits deriving from the existence of performance system.
1. Implementation by the critical successful factors by the support of the managerial team, availability and hence the quality of primary data
- 94% periodic use of KPI by companies applying indicators
- 53% use of synthetic reports
- 50% department heads responsibility
- 9% use of the balanced scorecard [5]
2. Benefits of the companies that have successfully implemented performance indicators KPIs:
- 76% correctly measured indicators
- 55% of indicators have an important role in decision making
- 56% KPIs enable rapid identification of areas of action in crisis
- 90% of measured values generate reactions from managerial team [5]
3. Support generated by arguments such as know-how, insights, experience, speed of implementation of performance indicators in the company, and also by the reserves, which explains that implementation of performance indicators KPI is not a priority for some of the companies, which prefer to achieve their goals by using internal resources. 70% of the companies consider that it is appropriate to cooperate with external consultants. The employees motivated by the important work done in the company are more focused on the purpose of their performance.[5] With the implementation of KPI indicators on industrial production lines, there were designed implementation systems and global industrial production and found that there might be some differences on the implementation of KPIs in terms of indicators summarizing all departments of industrial companies. This may change depending on the complexity of indicators of the macro thought production.

10. REFERENCES