

## **Implementing KPIs in SMEs through personnel participation. A case study**

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### **Abstract**

This paper presents a methodology used to implement KPIs in Small and Medium-sized Enterprises (SMEs) through personnel participation. We will illustrate it with a case study, developed in a small company that manufactures wooden furniture. This company, as do many others, has a minimalistic organizational structure and had at the beginning of the project a hardly developed management system and a lack of explicit KPIs. The work on which this paper is based was part of a project, the main objective of which was the creation of a scorecard, based on a set of KPIs that lead to a more efficient management, improving delivery times and customer service, the quality of the goods and the plant productivity. Authors participated in all phases of the project, designing the scoreboard and then the personnel participation program here presented in order to ensure project success.

**Keywords:** KPIs, personnel participation, continuous improvement.

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## **1. Introduction**

Nowadays, companies must face a great number of challenges that threaten their survival, especially in the difficult days we are living.

Among these challenges we could note the pressure to lower prices, the request of stricter quality standards, shorter manufacture batches, or shorter delivery times, for example. For this reason, many companies look for competitive advantages by better managing their processes, both through new investments and improvements that contribute to gradually increase the overall efficiency.

This last option, based mainly on making better use of the existing resources, is known as “continuous improvement” or “Kaizen” and is the base of other approaches, such as Just in Time, Lean Production or Total Quality Management. The continuous improvement represents a process of change throughout the organization, in order to improve the company’s results.

Although managerial support is essential to develop the activities associated to continuous improvement, most of these activities take place at the lower levels of the organization and therefore the personnel participation is essential to a successful implementation of continuous improvement, mainly due to features that are difficult to measure and reproduce, such as knowledge, skills and attitudes (Armitage and Keebel-Ramsay, 2009; Tzu-Shian et al., 2010).

In this context, this paper presents a methodology used to implement KPIs in Small and Medium-sized Enterprises (SMEs) through personnel participation. We will illustrate it with a case study, developed in a small company that manufactures wooden furniture. This company, as do many others, has a minimalistic organizational structure and had at the beginning of the project a hardly developed management system and a lack of explicit KPIs.

The work here presented was developed as part of a project, the main objective of which was the creation of a scorecard, based on a set of KPIs that led to a more efficient management and increased competitiveness, through improving delivery times and customer service, the quality of the goods and the plant productivity. Authors participated in all phases of the project, designing the scoreboard and then the personnel participation program here presented in order to ensure project success.

## **2. Case description**

Following this paragraph, there is a brief description of the company in which the presented work was developed.

The company participating in this project is a small company located in Galicia, in the northwest of Spain, which manufactures wood furniture. Its staff is

about 20 plant workers, plus a designer in the design office, a part time (4 hours per day) person developing administrative and accounting tasks and a manager, which performs commercial work also. At the time the project started, the company did not have any KPIs or any other kind of explicit management systems.

The growing pressure of environment and competitors continuously lower the sales of the company. Customers increasingly demand higher quality and service, but with smaller prices and shorter delivery times.

For all these reasons, the company decided to launch a project to improve its competitiveness, but with the restriction that the cost must be as short as possible, as its financial capacity at the time did not allow to make investments, or hire additional staff, nor hire outside consultants to develop all the work.

### **3. Project development**

To carry out the project the first decision was to create a work team, composed by the authors of this article, the manager of the company and the person in charge of accounting, as mentioned above. This team decided to develop the project into two phases, each of one year long durations.

#### ***3.1. First phase***

At the beginning of the first year, the following KPIs were defined.

- Fulfilment of delivery times
- Number of customer complaints
- Number of manufacturing non-compliances
- Overall Equipment Effectiveness (OEE)

These KPIs were selected for two main reasons. On the one hand, as said before, the company did not have sufficient human resources to create and maintain a complex set of KPIs. For that reason, we chose only four of them in this first phase.

On the other hand, the most important objectives in this project were to achieve an adequate customer service and reduce internal costs. The first two indicators were created to cover the first point and the two last ones for monitoring the reduction of internal costs.

Furthermore, the second and third KPIs were in turn classified into categories, in order to focus the attention for improvement on the ones most frequently appearing and to help to identify problems that normally go unnoticed but have a

notable impact on cost and quality (for example, reworks that everyone assumed as normal).

In particular, the data collection found significant difficulties. Sometimes, the data needed to calculate the KPI did not exist, because the associated concepts did not exist either. That was the case, for example, of the indicator related to delivery time fulfilment, because the company never established a due date for the orders. Other times, the classification of some type of data or the procedure needed to collect them was the main difficulty the company found to calculate the KPIs.

Likewise, due to the fact that the company size made impossible to have an IT department that could develop a specific software application, a simple and quick to develop tool was made, based on already used office software. This tool, though not very sophisticated, allowed data processing from the very beginning and supplied results quickly, which in turn made possible the continuous refinement of data quality and the need to improve the data collected and the procedures used to collect it.

As a next step, the manager were instructed to draw conclusions from the information collected and presented in graphical form by the tool, either by line graphics that showed temporal evolution of KPIs or by Pareto diagrams that allowed to highlight the most important problems and to focus the attention on them.

### ***3.2 Second phase***

The second phase took place mainly during the second year, although it actually started in the first one. Once the company was acquainted with the KPIs, the analysis of the information showed various points that should be improved. In order to achieve that improvement, the second phase was dedicated to analyse the causes of the problems and to find solutions for them. This, in turn, led to the discovery of new problems, which were also solved and so on. Considering the different ways available to carry out this phase, the project team decided to apply a participatory approach, given the fact that to obtain improvements and to increase competitiveness, the participation of people that work directly on the plant, analysing the problems and proposing solutions, is essential for the success of this project.

There are many cases of companies that consider participation as a basis for competitiveness increase (Boer et al., 2000, Rapp and Eklund, 2007). While there is some conceptual unanimity on the positive relationship between participation and increased business performance (Bessant and Caffyn, 1997, Boer et al., 2000), few studies analyse quantitatively the relationship (see e.g. Jorgensen et al., 2006), showing some works (García-Arca and Prado-Prado, 2002), the difficulty of

businesses to combine both concepts structurally due to the lack of indicators and targets to measure improvement.

In this case, we organized the personnel participation personnel around some key points:

- Creation of improvement teams. Some of the components of these teams were factory workers as will be explained later
- Staff training
- Visits to other companies, to learn from comparison
- Regular meetings, during which the problems were analysed, seeking for their causes and suggesting solutions
- Implementation of the solutions directly by the workers
- Monitoring of KPIs and measurement of improvements achieved by the team and continuous information to teams' members about the results achieved

Following these key points, the work was organized with two teams: improvement and implementation team. First, the improvement team consisted of production workers and the person belonging to the administrative department (this person also was assigned the role of team leader and coordinator). Furthermore, the manager, the coordinator of the improvement team and the authors of this article formed the implementation team. As can be seen, the improvement team coordinator takes part in both teams, to transmit to the implementation team the work and the difficulties the improvement team might find.

The improvement team worked on the problems identified by the components themselves or by the implementation team, making important contributions, in some cases simple and imaginative, yet affordable and of good economic result. Although initially one might think that the KPIs are only a tool for management, the improvement team used them to monitor the work being carried out, constantly checking the values of KPIs. A working method was implemented in the factory whereby the KPIs of the previous day were calculated by the workers and analysed before starting the work journey to make adjustments, if considered necessary.

On the other hand, the implementation team conducted its work in parallel with the improvement team. Its functions were to follow up the work of the other team to facilitate the means considered necessary and to focus work on those aspects that were more suitable for enterprise competitiveness. They also worked on other aspects which could not be addressed the implementation team, such as coordination and optimization of transport to customers.

### ***3.3 Project results***

As a result of the work developed along those two years, a number of important results were achieved. Among them we could highlight the following:

- Clear identification and reduction of number of manufacturing non-compliances, many of them due to machine setup problems
- Creation of the concept of due date, and later reduction of delivery times by 30%
- Awareness of the importance of fulfilling the delivery times
- Awareness of the importance of not producing non-compliances
- Intermediate stock reduction and in-process material
- Greater staff involvement and compromise with the company

## **4. Conclusions**

The methodology here explained has proven to be very useful to integrate the KPI development and implementation with personnel participation. The involvement shown by the workers in all tasks and all phases of the project, together with the good results obtained reveal that they felt comfortable and motivated.

The results of this experience show that personnel participation can be very convenient to support the implementation of KPIs. On the one hand, workers' involvement made data collection easier and provided very complete information, which, in turn, helped both the manager and the improvement teams to clearly identify various problems, many of which were unknown at that moment. On the other hand, their contribution to problem solution, through identifying the causes, proposing solutions, and implementing them, has been a key element in the success of the project.

Another important conclusion is the fact that this kind of project is possible even in a small company with an almost non-existent organizational structure.

This paper may be of interest for both researchers and professionals for different reasons. On the one hand, because of the methodology here presented, that extends the use of personnel participation to areas where it is not normally used. On the other hand, the proposed methodology can help companies to successfully implement KPIs and hence improve competitiveness while enhancing personnel motivation thanks to participation programs adoption. At the same time, the case here presented can serve as a reference to other companies, which, being small and having few staff resources to dedicate, can see that personnel participation is an interesting and effective approach to a project of this type.

## References

- Armitage A, Keeble-Ramsay D (2009) High Performance Working- What are the perceptions as a new form of employer-worker relationship?. *International Journal of Employment Studies*. Vol. 17, N 1, pp. 57-89.
- Bessant J, Caffyn S (1997) High involvement innovation through continuous improvement. *International Journal of Technology Management*, Vol. 14 No. 1, p. 7-28.
- Boer H, Berger A, Chapman R, Gertsen F (eds.) (2000) *CI changes. From suggestion box to organisational learning. Continuous improvement in Europe and Australia*. Ashgate, Aldershot.
- García A, Prado, JC (2002) *La participación del personal en la mejora continua de las empresas*. AEC, Madrid.
- Jorgensen F, Laugen B, Boer H (2006) *Human Resource Management for Continuous Improvement*. CINet 2006, pp. 443-454.
- Rapp C, Eklund J (2002) Sustainable development of improvement activities: the long-term operation of a suggestion scheme in a Swedish company. *Total Quality Management*, Vol. 13 No. 7, pp. 945-69.
- Tzu-Shian H, Hsu-Hsin C, Aihwa C (2010) Employee participation in decision making, psychological ownership and knowledge sharing: mediating role of organizational commitment in Taiwanese high-tech organizations. *International Journal of Human Resources Management*. Vol. 21, N<sup>o</sup>. 12, p 2218-2233.