Application Study of "Three-Level and Six-Categories" Benchmark Management System: A Case of Zhangjiakou Cigarette Factory

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Abstract: Recently, the tobacco industry has continuously promoted lean management, and the cigarette enterprises have gradually realized that the management changing from data-based to target-based benchmark, which has effectively promoted the improvement of enterprise management and becomes the booster for high-quality development. The establishment of an effective index management system is the key method to deepen the bench-marking management and enhances the core competitiveness of enterprises. This paper combines the actual development demands of Zhangjiakou Cigarette Factory, building a 'three-level and six-categories' standard management system. The system realizes the specific and feasible management methods in terms of planning and distribution, target setting, control analysis, evaluation and improvement. And this system improves the "hit rate" of management diagnosis, optimizes the guidance effect of bench-marking management for the high-quality development, and promotes the standard of bench-marking management for Zhang Cigarette.

Keywords: three levels and six categories; benchmark management; target system; goal setting

1 Introduction

Benchmark management is a key work of tobacco enterprise management, which is an effective carrier for enterprises to find gaps, make up shortcomings and become benchmark, as well as an important starting point to promote the high-quality development of tobacco enterprises. As an important management hub for enterprises to "strengthen external horizontal communication and promote internal vertical in-depth", how to locate, expand, and form a joint force is the main problem that needs to be solved in benchmark management of Zhangjiakou Cigarette Factory, and also a comprehensive reflection of enterprise management level.

In recent years, Zhangjiakou Cigarette Factory continued to advance benchmark management. However, how to implement the concept and requirements of benchmark management to the grass-roots level, throughout the whole process of production and operation, and how to

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enhance the control of benchmark.

It is the basis of production management process control of Zhangjiakou Cigarette Factory to construct "three-level and six-category" benchmark system. Through the establishment of effective method for benchmark management, the promotion of feasible benchmark index system, the breakdown of all kinds of indexes, extends, quota standards, analysis to improve, to determine that the indicators of all types and at all levels are in line with standards, to promote the development of various work of the enterprise, is an inevitable path to realize the scientific development of Zhangjiakou Cigarette Factory in wider areas and higher level.

2 Management status

There are still shortcomings in the operational management in Zhangjiakou Cigarette Factory.

2.1 Benchmark decomposition needs to be refined

The standards of the indicator responsible department of benchmark management have not kept up with the pace of management. This is manifested in two aspects: first, the hierarchy setting of benchmark indicators is not systematic, there is no refinement and sorting of indicators, there is no support and correlation indicators of various indicators, indicators are not decomposed to the end, and standards such as interpretation of indicators, accounting methods and target direction are not clear. Second, the benchmark assessment indicators tend to formulate unified standards, without formulating standards and control standards for specific specifications, which cannot guide the fine control of production workshops.

2.2 Benchmark has not been fully played

Combining with the benchmark system of the industry and China Tobacco Company, Zhangjiakou Cigarette Factory needs to establish a system which is consistent with its own benchmark management characteristics. The role of benchmark management in guiding, connecting and promoting the production process is not fully played, which is mainly manifested in two aspects: first, the management and control is not systematic. Benchmark indicators are only implemented in individual departments. Although the level and focus of benchmark indicators are constantly moving downward, each department only pays attention to undertaking indicators, and process control fails to coordinate the correlation between indicators, so it is easy to take care of one department and lose another.Second, the responsibilities are not clear. All kinds of indicators are not detailed and decomposed, relevant departments, teams/machines are not clear about the responsibility of benchmark, management at all levels and employees can not achieve independent management.

2.3 The timeliness of benchmark control is not strong

At present, benchmark management mainly focuses on benchmark index accounting and post-analysis, which affects the guidance effect of benchmark data to a certain extent. Data management and control nodes should be moved to the production process to strengthen in-process control.

3 Research path of system construction

3.1 Construct "three-level and six-category" benchmark index system

3.1.1 The overall design idea of benchmark index system

According to the overall planning of tobacco industry and combined with the strategic thinking of China Tobacco Company, the development direction of benchmark management of Zhangjiakou Cigarette Factory is determined. Indicators are constructed as a linkage system of three levels of management: first-level indicators (company level), second-level indicators (department level), and third-level indicators (post/team level). Through the establishment of three-level management mode, it guides the departments and posts of indicators at all levels to realize the timely improvement of key influencing factors of indicators, compacts the post functions of each indicator, makes specific measures for each indicator, and provides effective support for the upper indicators at the same time. The system constructs a control mechanism covering six categories of production and operation, focusing on personnel, quality, equipment, consumption, cost and energy control. The six categories of indicators above are highly correlated and relatively independent.

To establish a three-level and six-category index database, we should give full consideration to the mutual relations among indicators such as support, classification, correlation and restriction, break down and list indicators at all levels and types one by one, and extend indicators to the bottom. Define departments/posts, units of measurement, calculation accuracy, control requirements, target value, fluctuation interval, warning value, interpretation and definition, calculation formula, critical control points and other dimensions of each indicator.

When planning and designing indicators, use the following tools and methods selectively:

(1) Key Performance Indicators (KPI) method

The Key Performance Indicators (KPI) method is mainly applied to the index decomposition of corporate strategy, that is, to decompose corporate strategy into actionable indicators and objectives.On the basis of clarifying the superior company's development strategy and enterprise's development goals, brainstorm method and fishbone analysis method are used to find out the company's business priorities and key performance indicators (KPI) in key areas, that is, company-level KPI. According to the company-level KPI, the supervisors of each department formulate the department KPI, decompose it, and determine the relevant elements and objectives to generate the department-level KPI. The supervisors and personnel of each department further subdivide KPI into more specific performance measurement indicators for each position.

(2) Process factor analysis

Process method is suitable for index planning of product production process. Firstly, it is necessary to identify the various factors and attributes of process output (i.e. product) that meet relevant requirements. Secondly, it is necessary to sort out and identify the relevant factor requirements or indicators of important key activities or key links in the process.

Cigarette production and processing as a set of process, a certain attribute of the output product can be used as a benchmark index, such as mouth rod consumption, wire rod rate, and

the corresponding internal key link mouth rod related indicators include emissivity, residual rate, etc. By using process method, each kind of sub-process can be analyzed layer by layer, and a series of related indicators of the system can be sorted out.

The details are shown in the following figure 1.

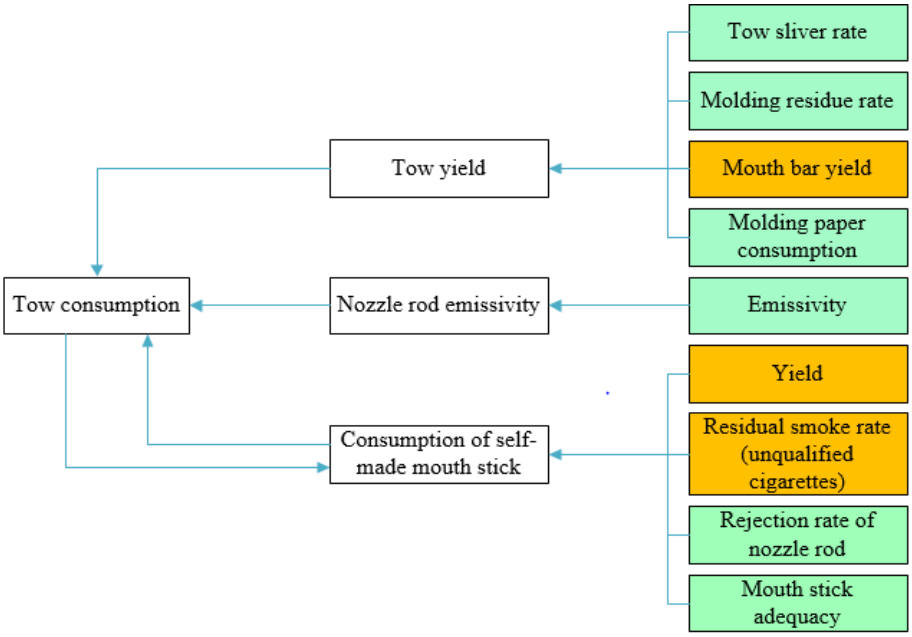

Fig 1. Process factor analysis method

3.1.2 Detailed design of benchmark evaluation criteria

On the scope of the standard, indicator system on benchmark standard of the tobacco industry, with reference to the goals and objectives of China Tobacco Company, in accordance with the Zhangjiakou Cigarette Factory's stage focus, refer to the historical data and the status quo of the indicators in three levels and six categories. Through mean calculation, extreme value and standard deviation analysis of basic data, the indicators of basic data by mean, invalid and deviation data are eliminated and effective data are formed, which serve as the basis for setting goals for indicators. The standard value, target value and early warning value are set by using benchmark method.

In dynamic management, with the change of equipment debugging, process test and other factors, strengthen the dynamic update of quota indicators, in order to better play the guiding role of the indicators target to each link. Quota standards should be dynamically adjusted. Quota standards should be timely updated and adjusted according to the actual production to avoid being divorced from reality and prevent actual effects from lagging behind.

When setting target indicators, the following principles and methods should be used selectively:

(1) SMART rule

When analyzing and setting the target value of the company's benchmark indicators, SMART rule can be used to select the appropriate target value and analyze the suitability of the indicators. SMART rule means: S stands for Specific, indicating that the indicators should be specific, and the setting of target value should be specific to the target indicators, not general. M is for Measurable, indicating that goals are quantifiable or behavioral, and data or information is available to verify those target value. A is "Attainable", indicating that the goal is attainable with effort and avoidance of setting too high or too low goals. R stands for Relevant, meaning that the goal is Relevant to other goals. T is for Timebound, meaning that it focuses on specific deadlines for meeting performance targets.

(2) Benchmark method

First of all, combined with the status quo of various indicators in the past two years, determine the fluctuation interval, standard value and target value of each indicator, and the target value can be the best historical value, industry benchmark value, theoretical value, etc. When setting the target value of the three-level and six-category benchmark indicators, we can set the maintenance target level as determined target value (standard value), and set the improvement and breakthrough target level as striving target value (target value) at all levels. Through the benchmark method, we can find the weak indicators, compare with the benchmark, find the gap, analyze the reasons, implement improvement, and enhance the comprehensive performance of the factory in the target management of the three-level and six-category indicators.

(3) Detailed indicators design of characteristics of Zhangjiakou Cigarette Factory

In the detailed indicator design, on the basis of effective data source analysis, each indicator should be decomposed into each brand, each type of specification element and each specific material indicator according to dimensions such as cigarette specification and brand number. In view of the differences in various indicators of different cigarette brands and specifications, standards for each material and each specification are formulated respectively, and indicators are classified according to factors such as output scale and cigarette specifications.

This method focuses on results-oriented, and its advantage lies in that it can directly reflect the level of each indicator result in the industry, but we can not get the specific factors that affect the indicators.

3.1.3 Establishment of benchmark index system

Benchmark indicators include company-level indicators, department-level indicators, team/post-level indicators, including 8 personnel indicators, 24 equipment indicators, 68 quality indicators, 91 consumption indicators, 18 cost indicators and 18 energy indicators, a total of 227 indicators.

After the completion of the three-level and six-category benchmark index system, early warning should be set for the target, that is, when the current level deviates from the established target and exceeds the range of fluctuation value, early warning should be given to it in time to avoid larger deviation.

When there is a large deviation from the target set in the specific work process, it is necessary

to conduct indicator analysis on abnormal data in time, find the reasons for the difference from the target and the solutions, and divide the problem levels, so as to identify the key points of the problem more directly and try to avoid them in the future.

3.2 Carry out real-time analysis of three-level and six-category indicators

Strengthen the control and analysis of indicators according to index quota standards, accurately quantify the variation range of all kinds of indicators in the whole process according to the early warning response, find data anomalies to the maximum extent, and improve the effect of data inspection.

The "scale" of the index quota standard is preset in the process of silk making and wrapping, and "prescribed actions" such as monitoring, warning and reporting are added. Timely reports are made to the superior departments through difference analysis, so that the departments responsible for the index can timely implement, record and report the reasons.Carry out the whole process test for a certain brand in batches based on each process of the production workshop. Evaluate the status of equipment, material consumption, quality, energy and other indicators, provide data support for index quota, the root causes of various indicators.Verify and check the rationality and accuracy of index setting.Hold the seminar of benchmark index quota, report meeting of index assessment stage, summarize the periodical achievements of the department, collect problems and suggestions, formulate improvement measures, and constantly improve.

4 Management effect of "three-level and six-category" benchmark index system

4.1 Refine the definition of indicators and improve the accounting caliber

In order to find the accounting methods that is more suit to the actual development needs of the enterprise in numerous algorithm and excavate the deep meaning behind the statistics, this system innovatively combines definition, refinement and decomposition, analysis of advantages and disadvantages,weight measurement focus, chooses the best accounting caliber and statistical analysis method, and restores the overall characteristics of a particular aspect or some aspects to the greatest extent, so that the leadership can deeply understand the problems existing in the production and operation of the enterprise, make correct decisions, and formulate measures for continuous improvement.

4.2 Optimize parameters and strengthen benchmark

This system indicatively explores the relationship among different indexes such as process quality, equipment operation, material consumption and cost, and finds the best state parameters among indexes by evaluating the balance relationship of indexes, and then modifies them. For example: through the analysis of the relationship between the speed of equipment and the number of small boxes removed, we explore the situation of small box packing machine stopped due to the change of materials and other reasons of short time shutdown, and try out the method of "strip bags stop, small bags slow down, reduce the removal".

4.3 Multidimensional analysis, improve the effectiveness

Through the study of the correlation among similar indicators, we connect the data organically, open to different data perspectives flexibly,and apply multidimensional analysis of indicators to feedback the actual situation of relevant indicators. For example, by using the correlation analysis of other dimensions of greenstone second-generation product indicators, it can be accurately analyzed that the main reason for the increase of indicators is the influence of tobacco consumption, and the analysis conclusion can be further verified by tobacco indicators.

5 Conclusion

System construction is the comprehensive embodiment of enterprise management level, is the basis of enterprise production management process control.It is an important measure to build a three-level and six-category indicator system to refine hierarchical management, implement responsibilities, carry out indicator management, target setting, data monitoring and evaluation improvement, which is to improve the shortcomings of Zhangjiakou Cigarette Factory, improve the quality of all staff, and ultimately achieve the independent management of employees at all levels and achieve high-quality development of the enterprise.In the future, we will continue to improve the system platform, optimize the index mechanism, process mechanism and evaluation mechanism, so that the benchmark index system is more comprehensive, the benchmark management is more scientific and reasonable, and the basic management of Zhangjiakou Cigarette factory enterprise is more efficient.

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