Information Management System within the Production Safety Scheme through Analysis of Investment

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Abstract. Production safety is of most importance to middle class workers. This is seen as the most important section since we need to give clear and detailed information of the safety status for the society to be assured of development with good vision. This paper is mainly about how we should be careful with the investment of Production Safety, as we are a part of the fast developing economy sector. To achieve the requirements both set by the authorities and production safety system, we should be making improvements based different settings in different times.

1. Introduction

1.1. Background Knowledge of Production Safety in China
It is widely accepted that through the development of industries in China, most economic sectors are enjoying great revenue because of the great amount of production every year. Take the example of mining industry, it is reported that the death rate per 1,000,000 tons had been 6.10, 5.07, 4.64, 4.17, 3.08 from year 2000 to year 2004.

This can be viewed as the great work results by the Chinese government with their efforts of inspection and the pressure by the social media both inside and outside China, with their attentive discussion about the growing road map for Chinese power supplying industry.

Thus, we have to look at the real impact of Chinese businesses over their attitude for production safety investment. To take a close look, it is totally accepted that Chinese enterprises should be more considerate of the working environment and related conditions provided for workers.

1.2. Accidents Related Costs
Since we need to be more sensible with the decision making of production safety investment, it is of great importance to calculate the cost of failure of accidents protection.

\[ K = k_1 \cdot C + k_2 \cdot R + k_3 \cdot E \]  

In which
- C stands for casualty in the accident;
- R stands for rescuing cost;
- E stands for insurance fees paid.

In this formula, I definitely include all the related fees divided in three sections. \( k_1, k_2, k_3 \) can be the magnifying factor decided by
  - The figures people dying;
  - Equipment used in the rescuing;
2. Different Kinds of Production Safety Investment

2.1. Production Safety Investment Definition and Introduction
The following is a table regarding all categories of investment Chinese businesses mainly introduced. The content within this table has changed a lot in the past ten years for the following reasons:
- The training requirement has been changing annually;
- Single price for personal protective equipment has always been changing;
- Production safety management system changes.

| Investment Category                              | Detailed definition for the safety investment category                                      |
|--------------------------------------------------|---------------------------------------------------------------------------------------------|
| Fees for training                                | Fees for new coming and positions of special needs in safety (e.g. inside inspectors for workers’ safety) |
| Fees for personal protective equipment           | Fees for buying personal protective equipment like working shoes with toes protection and masks |
| Fees for industrial safety inspection and related problems shooting | Fees for the checking of production safety system working status and problems found shooting |

Here we have the definition for the content of management information system, since we are a Sino-Germany cooperation, my company used the information system provided by Shanghai Auto Industry Cooperation. With the information above gathered, the yearly production safety investment can be described as followed.

2.2. Production Safety Investment Management Information System
Since we need to be very detailed in the production safety investment to ensure the good result is delivered to all work related personals, several points are to be put forward: (1)Being very careful about the planning is necessary for the above sections of production investment. (2)There should be a steering a committee to be sure of the carrying out of the procedures is well monitored and done in accordance with the decisions made by workers’ union.

3. Performance Improvements

3.1. Production Safety Investment Information System Outlines
The production safety management information system is viewed as a reflection board well as a process indicator of telling where need to focus on and where we need to decrease the amount of investment.

The following Figure.1 is the framework regarding the production safety investment management system.
Figure 1. Framework of the management information system regarding production safety

From Figure 1, there are several arguments important to be noticed:

1. The information system here is a reminder and, of course, noticing board for all the users to be updated according to any changes happened;

2. The information system here is can be accessed by the majority of work force related to the investment, with which they are totally fine with the changes and related performance outcome.

3.2. Production Safety Performance Outcome Improvement

To be sure of the management information functioning, two investment categories are chosen for study for several reasons:

1. Fees for training is applied for the majority asking them to be totally embraced with the new production safety management system set up by Chinese government and regulators employed by foreign investors;

2. Fees for personal protective equipment should be the need set by both the workers and through discussions with workers union and production planning department.

After selecting the categories to make plans for improvement, we have discussions and made the changes shown in the following tables:
| Year | Percentage of fees for training in each year to the whole amount of investment | Growth rate each year of fees for training |
|------|---------------------------------------------------------------------------------|------------------------------------------|
| 1st year | 3% | / |
| 2nd year | 7% | 4% |
| 3rd year | 10% | 3% |

The above figure shows the production safety investment system changes in Fees for training based on the following reasons:

1) Change of the authentication body regarding the production safety standardization system;
2) Local government asked for the new workers to be reaching the requirement set by work safety production committee

| Year | Percentage of fees for personal protective equipment to the whole amount of investment | Changing rate each year of fees for personal protective equipment |
|------|--------------------------------------------------------------------------------------|----------------------|
| 1st year | 6% | / |
| 2nd year | 8% | 2% |
| 3rd year | 7% | 1% |

The above figure shows the production safety investment system function in two parts:

1) Increasing number of workers hiring;
2) Investment in different kinds (helmets, masks, training, system inspection and problem shooting etc.) changed when the production plan for different products had made changes over the number produced of each product.

4. References

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