Risk application research on risk warning mechanism in organizational crisis management – taking Vanke Real Estate Co. Ltd., as an example

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A R T I C L E   I N F O

A B S T R A C T

With the changes in domestic and international economic environment, the increasingly dynamic and complex environment has become the pressures and challenges that enterprises have to face. From the perspective of healthy development of companies in long-term running, it's urgent to build an enterprise risk warning system.

This paper takes daily operational risks and crises in Chinese enterprises as the research object, synthetically using the relevant knowledge of risk management theory, early warning management theory, the strategic management theory, the analytic hierarchy process, and fuzzy mathematics to build a daily management risk early warning system for Chinese enterprises. By constructing the system, the enterprises can make dynamic tracking for different stages in business management, so as to realize the risk before crises, take some actions during and after crises.

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1. Introduction

1.1. Background

For the changes in both domestic and international environment, it is easy to see that increasingly complex dynamic environment has become the common situation enterprises have to face up with. Business dilemma, concession, and even disappearance from the market become more and more common [1,2]. In the 21st century, a series of crises took place, such as trenchant refund conditions of SK-II, Sudan Red incident of Kentucky [4,5], baby formula scandal of Nestle [3], melamine milk incident of Sanlu [6,7], the event of Shuanghui clenbuterol [8,9], and poisonous floor event of Vanke [10]. These events were so eye-popping. When the crises occurs, the management are often in the situation of having incomplete or late information, or even inaccurate information, which leads to the damaged image of enterprises or product reputation, and even business bankrupts. According to one domestic research, Chinese enterprises, compared with those in developed countries, run a shorter business life. In 2005, Chinese First Private Business Development Report showed that 60% of Chinese private companies bankrupted in five years since 1990s, 85% of Chinese private companies disappearing in 10 years, and the average life span was less than 2.5 years. According to this investigation, most of these bankrupted companies have weak risk consciousness, and unhealthy risk warning system [11]. The data indicated that the application of business early-warning system on business crisis management has become an important issue in business daily operation and management [12]. How to carry out risk management, prevent business crises, or reduce the crisis loss to the minimum level, becomes one of the required courses for the survival

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and development of each company in the dynamic and complex environment [13].

Every company will experience a variety of crises in different stages during their growth process, some of which sometimes could be deadly [14], no matter they are world famous enterprises or SMEs. Those who can effectively respond to crises and turn crises into opportunities are matured business and can maintain healthy and sustainable development in their day-to-day operations. Companies should have a strong sense of crisis prevention and pay close attention to crises [15].

2. Literature

2.1. Business risk early warning theories

Early-warning was firstly used for military. Later, based on military warning research, the conception was applied to social scientific fields, especially to economic field. The research for macro-economic warning has tended to be mature, but is not so well organized for micro-economic scope, in which business risk early warning is one of the main research objects.

Huang [16] considered that early-warning is to compare the actual conditions gained by information investigation during different stages of business operations with standard, and to give out a warning signal when the actual state is over the security line. Chen [17] considered that early-warning is a dynamic tracking and description for each stage of business operations based on previous study, such as risk analysis, risk identification, and risk evaluation.

Based on the definitions of different experts, the paper defined the risk early-warning as the forecasting and alarming to uncertainties possibly existing in the system, by recognition and analysis on the risk factors, and timely action on acquired information, according to the internal and external environment change of enterprises [18,19].

Risk early warning system has following three functions: (1) Warning: By information collection on researched object, and subsequent information screening, classification, and comparative analysis, the source of the risks can be traced, and warning signals will be sent out for decision-makers to take effective actions. (2) Control: The focus of risk early warning mechanism is to prevent the crisis from taking place, control the width and depth of the impact of the crisis, or deal with the crisis and draw lessons thereafter. (3) Immunity: It refers to the effective response, the decision making and management to crises, when the risk early warning system recognize the homologous or the same type of risks When companies confront the same situation, they can be able to accurately predict and react quickly, using the effective means to control, or learn from the experience and lessons to make themselves self-adjusted or self-controlled.

Generally, there are seven steps to build up a set of risk early warning mechanism in crisis management: (1) risk monitoring; (2) risk identification; (3) risk analysis; (4) index selection; (5) model construction; (6) warning evaluation; and (7) warning response [20–22].

Among these steps, risk identification, the fundamental step in risk early-warning management, is used to analyze the occasions for potential crisis wholly and systematically by related theories and methods, so as to identify the key potential crisis factors existing in internal and external of the company. The methods for risk identification include the on-the-spot investigation, Delphi, risk factor analysis, flow chart, and environmental investigation method and so on [23–25].

Risk analysis is to analyze the internal and external factors that cause crisis and the seriousness when a crisis breaks out on the basis of risk identification. Both risk identification and risk analysis need qualitative analysis on potential crisis. Index selection is aimed to choose those measurable business risk state or major factors reflecting business comprehensive situation, and to determine the weight and safety range of different indexes. Warning evaluation is aimed to identify the risk situation by appropriate risk early-warning evaluation methods. Warning response means to adopt corresponding strategies based on warning evaluation so as to keep the company running safely [26,27].

Based on dynamic supervision on business risk early-warning indexation, risk early-warning evaluation is aimed to identify the risk state of companies and find out the reasons leading to the situation by a certain qualitative evaluation methods or quantitative models, and then some constructive suggestions and preventive measures are put forward to the evaluation results.

2.2. Business crisis management

Business Crisis management is a kind of scientific management system, which seeks to summarize the law of crisis occurrence and development, further, to avoid and reduce the harm of the crisis according to enterprise crisis monitoring, crisis warning, crisis decision-making and crisis handling [28–30].

Enterprises are faced with various crises, such as environmental mutation, policy changes, the credit crisis, enterprise resource personalization and so on [31]. The primary part of crisis management is to monitor the crisis. Therefore ,it is essential to set up a crisis management mechanism to detect the crisis [32,33].

Many signs will appear before the outbreak of crisis. Crisis management is concerned with not only the postcrisis handling, but also the establishment of crisis cordon. Nipping avoidable crisis in the bud, solving inevitable crises in time through early warning systems , in this way, enterprises can leisurely deal with challenges of the crisis, to reduce the loss of business to the lowest level [34,35].

Enterprises make the right decisions on the basis of the circumstances surrounding the crisis. Firstly, several possible options should be put forward according to the crisis investigation. Secondly, advantages and disadvantages of these options should be analyzed. Thirdly, select the best solution after comparison of these options [36,37].

Timely and effective crisis handling is helpful to avoid the loss of business. Firstly, recognize the crisis, which includes the crisis classification, crisis-related information collection, the criticality confirmation and the causes,