

Development Trend of Enterprise Organization Vulnerability: a Literature Review

Wang Chao, Liu Jing

School of Management, Wuhan University of Technology, Wuhan, P.R.China, 430070

(E-mail: wangchao7311@gmail.com, lovelyjingl@yahoo.com.cn)

Abstract: This paper is concerned with an exploration of vulnerability, a new science that has been universally accepted as a method to analyze risk and crisis. It proposes setting out a thesis that places “vulnerability”, as both a function and a process, at the centre of enterprise organization management and early warning management. The paper quotes from abundant literatures to argue the relationship between vulnerability, and the omen of risk and crisis. The purpose of this article aims to conclude by offering the new developments that are available to indicate the development trend of vulnerability.

Keywords: Vulnerability; Enterprise organization; Development trend; Early warning

1 Introduction

Enterprise Organization Vulnerability is the capacity of enterprise organization systems to anticipate, cope with, resist and recover from impacts of both internal and external hazard. The vulnerability of enterprise organization is a determinant of probability of risk and crisis, and capacity of sustainable development. Professor Claus Schwab, the initiator of World Economic Forum, indicated the importance of vulnerability. He said that faced with vulnerability, to keep sustainable development, it is important to reduce the vulnerability first (2002). Now, early warning mechanism and method of vulnerability, has become a research object. It is sufficiently significant, under the development of globalization, to enterprise management and early warning management.

The theories about risk and crisis management aim to solve the happened and happening risk and crisis. Researchers invariably got every index after enterprises erred in management. Thus, they only analyzed the happened erroneous way of management. However, researches of enterprise organization vulnerability are based on the normal operation condition. Analyzing the internal and external environment, researchers examine enterprise' healthy conditions, and explore the objective law of vulnerability. Conclusions of vulnerability researches help enterprises fix internal Structural deficiencies, reply negative impacts of poor external conditions, and gain the sustainable development capability. This paper aims to argue early warning mechanism of enterprise organization vulnerability. It contains three sectors: vulnerability investigation, enterprise organization investigation, enterprise warning management investigation. The paper will offer the national and international new developments on these three sectors.

2 National and International Relevant Researches on Vulnerability and The New Developments.

The concept of Vulnerability has long been an issue since 1970s. It has been frequently utilized in the study of both global environmental conservation and sustainable development, and comes into the domain of disaster science and social economic systems. Vulnerability, one of the seven core issue, was regarded as a significant tool applied to sustainable scientific field (Kates, 2001)⁰. What is also clear is that Vulnerability has become a new science concerned by many scholars⁰⁰.

With an upsurge of interest in the study of vulnerability, academe showed their researches in the Enterprise system, of which results mainly embodied in two respects.

(1) Macroscopical vulnerability and the enterprise system

It is one aspect of that broader literatures put particular emphasis on macroscopical vulnerability in enterprise system. Considering the Production mechanism, Fan Hongye (2008) introduced the concept of vulnerability⁰, an inner structural deficiency that was produced within the progress of preconstruction and operation influencing the enterprise survival and development ability. It also contained normal operational capacity deficiency, Self restoration capacity deficiency. Fan explored the cause of enterprise vulnerability, spread mechanism and warning management, as well. Considering the aftereffects, Wen Hua and Wang Zhan (2008) regarded vulnerability as an effective level to control crisis and restore enterprise⁰. However, there is hardly any literature on vulnerability embodied by Elsevier SD, Springerlink and ISI Web of knowledge.

(2) Microcosmic vulnerability and the enterprise system

Another aspect is microcosmic vulnerability, researches in western countries focus on information security vulnerability and Supply chain vulnerability (Ramakrishnan, 2002⁰; Svensson, 2000⁰; Wagne, 2006⁰; Hongliang Zhang, 2007⁰). In china, researches involve various contents, such as private enterprises (Zhong Dajun, 2003⁰), computer system (Zhao Li and Lin Zhong, 2004⁰), teams (Jin Hui, 2005⁰), Corporate brands (Zheng Chundong, 2008⁰), innovative enterprise ventures growth (Liu Hongde and Shi Zhuqing, 2010⁰), human resources (Wang Chao, 2010⁰), marketing (Liu Mingfei, 2009, 2010⁰⁰), etc.

Now there are only a few literatures on enterprise vulnerability. Smith (2005) proposed vulnerability was comparatively neglected in mainstream of management literatures, but was sufficiently significant to discuss failures⁰. In his researches, vulnerability was regarded as a deficiency caused by crisis management and it was one of the main reason of crisis. But Smith did not explore what resulted in vulnerability and how to evaluate, warn and control vulnerability. And there was nothing referring to vulnerability searched in Chinese academic network publication of the document library.

3 National and International Relevant Researches on Vulnerability of Business Organization and The New Developments

The concept of vulnerability of enterprise organizations reflects the capability that enterprise organization take a risk, fit in the changes of both internal and external environment⁰, and restored to normal status. Though researchers seldom study vulnerability of enterprise organization, researches on ways of setting the changes of internal and external organization environment are abundance.

Adapting enterprise organization themselves to the new conditions is the only method to survive in current complex and changeful environment. These researches could be separated into two categories:

(1) Positive-going and successful angle

It contains enterprise organization flexibility⁰, enterprise organization elasticity⁰, enterprise organization adaptability⁰, learning organization⁰, organization health⁰, enterprise sustainable development⁰, etc. The study of vulnerability of enterprise organization owns a different view, and it puts emphasis on methods of avoid the harm of both internal and external environment changes. Thus, vulnerability opposes to sustainable development (Feng Zhenhuan and Zhao Guojie, 2005). But current researches focusing on adaptability capability, will lead to neglect flexibility and elasticity. Thus, those researches offer abundant resources to study mechanisms and countermeasures.

(2) Negative-going and unsuccessful angle

It contains risk and crisis management and vulnerability. Though risk and crisis is not uniform definition, risk is a possibility of incurring loss or misfortune⁰, and crisis is an unstable situation of extreme danger or difficulty⁰. Researches of risk and crisis have analyzed the happened failures, thus there is a lack of researches about what leads to risk and crisis. Zhang Liangsen (2007) proposed vulnerability that represented a series of studies of enterprise organization systems, was a link with risk and crisis that indicated probability of risk and crisis⁰. U.N.. (2010) proposed a risk formula that indicated the relationship between risk and vulnerability⁰:

$$\text{Risk} = \text{Hazard} * \text{Vulnerability} / \text{Resilience}$$

Thus, the objective that researches of vulnerability of enterprise organization are similar to risk but their objects are distinct. And vulnerability seems to have its own necessary reference value.

4 National and International Relevant Researches on Early Warning Management of Vulnerability of Enterprise Organization and The New Developments

The phrase of Early warning comes from military, then is extensive applied various fields, such as Social politics, economy, macro management, environmental protection, Public security, enterprise risk and crisis, etc. Economic early warning contains four periods: clearing the significance, finding the source, analyzing the omen, and forecasting the schedule⁰. And now early warning contain four research objects: enterprise early warning mechanism⁰, enterprise industry early warning, early warning of enterprise management functions, and evaluation model of enterprise early warning.

And researches of enterprise early warning management put emphasis on both determining the early warning indicators and evaluation model. There have been ten methods to handle early warning indicators (Deng Aimin, 2008⁰): Fuzzy Comprehensive Evaluation Method, Analytic Hierarchy Process,

Structural Equation Modeling, Grey System Theory, Artificial Neural Networks modeling, Discriminant Analysis, etc. In china, enterprise early warning theoretical framework has primarily formed (She Congguo and Xi Youmin, 2003; Zhao Xu and Xin Zhigao, 2010⁰). But without analyses of significance and source of early warning, it will hinder Chinese researches about enterprise early warning development.

Enterprise organization system has developed researches about risk and crisis, which contain features, causes, evaluation index and models (Luo Fan, 2000 and 2001⁰⁰; Hou Erxiu, 2006⁰; Du Danli, 2009⁰; Agrawal, 2010⁰). However, in those researches, flexibility and elasticity can not be effectively monitored and evaluated. Thus, in-depth researches on risk and crisis are seldom.

5 Conclusions

Overall, as an intrinsic property in enterprise organization, vulnerability has become a hotspot that is beneficial to study sustainable development. And enterprise organization have primarily studied vulnerability, which still need to explore early warning mechanism and method. We could utilize available method, an appraisal system used to differentiate or reduce vulnerability, and achievements of enterprise organization vulnerability researches to keep enterprise organization in good conditions. So it can be beneficial to fit changes of internal and external environment, and to make enterprise organization gain the sustainable development capability.

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