Vulnerabilities of Virtual and Networked Organizations

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ABSTRACT

Virtual organizations (VO) represent a future paradigm of business. Having in mind different types of perturbations in business today, from the economic crisis to the earthquakes in Japan and terrorists' actions, new business solutions have emerged in order to sustain development all over the world. As a new field in scientific research, organizational resilience needs to be investigated in the context of VO's. This paper has the intention to suggest a qualitative way to assess one dimension of organizational resilience in VO's related to keystone vulnerabilities and to establish directions for future work, emphasizing the importance of quantifying overall organizational resilience.

Keywords: Fuzzy Model, Management of the Keystone Vulnerabilities, Resilience, Virtual Organization, Vulnerabilities

INTRODUCTION

Disruption in business has widened, it includes a traditional natural disaster and any event that disturbs this fast-paced operational flow — from an acquisition or organization's growth to a new government regulation or to a scheduled system upgrade. Many organizations today are made up of multiple, distributed members, temporarily linked together for competitive advantage, that share common value chains and business processes supported by distributed information technology. These organizations are virtual organizations (VO).

Efforts to improve the capacity for improvements and sustainability mechanisms of systems have often been an interesting theme of researchers and practitioners (Andre et al, 2009). The practical concern for this topic is usually driven by events that have happened and can cause serious damage, either in one organization or in the industry as a whole. The

motivation for organizations and VOs to prevent such events from happening again, in concrete cases is because they may result in severe losses (including equipment, funding, internal resources, even employees) (Robb, 2000). New demands are invariably seen as translating into increased costs for organizations and VOs so they lead to challenges that should be overcome. Theoretically, the business paradigm called organizational resilience (McManus, 2008) should give answers on how to successfully overcome all kinds of disruptions and business threats. Very important issue during resilience assessment is process approach which can be observed in the papers which treat resilience of social - ecological systems (Manyena, 2006). In the terms of process approach, resilience can be seen as the ability of a system to recover and adapt to disturbances in the environment, while continuing to operate as if the characteristics of change have never occurred. Having on mind this, it can be concluded that resilience is a process and not an outcome. The characteristics of a system which can be defined as a resilient are related to the focusing on the recovery from disturbances, i.e. adaptation to the disorder, natural disasters, etc.

In the world of business, risks and organizational vulnerabilities must be treated permanently because in the time of crisis they may lead to catastrophe. In a social system, components and features of resilience may be defined through five thematic areas where the appropriate action is possible to be implemented (Twigg, 2007): (1) management, (2) risk assessment, (3) knowledge and education, (4) risk management, (5) decreasing vulnerabilities and preparing for disturbances and reaction to them. In the current business environment, organizations need to be engaged in a comprehensive and systematic process of prevention, preparedness, mitigation, response and recovery and business continuity. Business conditions show that it is not enough for organizations to have a draft plan that provides scenarios for disaster or emergency. The concept of resilience has become incorporated into the knowledge of the corporate strategy of successful companies

on a global scale. Threats and disruptions in business require direct facing and solving in the course of a business process. Solving issues must provide dynamic and interactive relationship that aims to ensure the continuation of the main activities of the previous organization, during and after major crisis events. During the process of strategy design and implementation, the most used technology is information and communication technology (ICT). ICT has big influence on business operations and capability, organizational capability and core capabilities from the resilience perspective (Pham & Jordan, 2006). Improvisation concept in the terms of resilience can be valuable solution in the time of crisis. The positive result of improvisation is learning which can be used to solve next issues: (1) how to improve organizational performances, (2) how to apply the re-utilization of improvisation, (3) how to apply the action component of improvisation. Some other technologies and resources (internal and external) are also valuable for organizations. Current trends of management bring together different approaches in pursuit of sustainable resource usage and achieving social and ecological resilience (Plummer & Armitage, 2007). It is very important to carry out an evaluation in natural resource management while considering the sustainability of organizations and to employ it in the light of complex adaptive systems thinking. An evaluative framework for this action brings three broad components: system conditions, livelihood outcomes and process and institutional conditions. Considering these properties, a good way for achieving sustainability is overcoming vulnerabilities which can be analyzed from the organizational level perspective, management of organizational resources, etc.

One of the burning issues in the area of resilience is to define keystone vulnerabilities in organization and to quantify the measure of its management. Vulnerability is a complex organizational property in terms of its own nature, so it cannot be easily reduced to a single metric which makes it hard to quantify. It is very difficult to accomplish definition of

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