

## Chapter 13

# AHP–Driven Knowledge Leakage Risk Assessment Model: A Construct–Apply–Control Cycle Approach

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### **ABSTRACT**

*Intellectual Capital (IC) is becoming more widely understood by the academic and business communities, especially its important role in value creation of an organization. However, few people are aware that IC, if not managed properly, may also pose threats, sometime serious, to an organization. Knowledge leakage from an organization, for example, may come about when an experienced employee leaves for another job. Knowledge leakage is pervasive throughout an organization but is seldom noticed until the consequence is felt. This intellectual capital risk has to be systematically and effectively identified, assessed and controlled in the whole value chain of an organization. An AHP (Analytic Hierarchy Process) based multi-dimensional decision making and assessment model is developed to determine knowledge leakage risk in an organization.*

### **INTRODUCTION**

In the globalized knowledge-intensive, technology-driven economy, the importance of knowledge to any sector in society or business has never been so critical. Intellectual capital (IC), a term often used interchangeably with knowledge assets, refers to the knowledge, skills and experiences of employees, and the

DOI: 10.4018/978-1-7998-1760-4.ch013

### ***AHP-Driven Knowledge Leakage Risk Assessment Model***

knowledge embedded in business processes, management practice, company culture, client relationships etc. of an organization. Edvinsson (1997) stated that IC was knowledge that could be transformed into values (products or services) to generate revenues for an organization. For a long time since the term was coined, IC has been classified into three categories: human capital, structural capital and relational capital (Edvinsson & Kivikas, 2007). IC has also received growing attention by the public and business people, and a fair amount of research efforts by academics. The focus up to now has been on the value creation side of IC. This is expected. However, the downside of IC, or IC risks, is not on the radar of many professionals, including researchers, despite its potential disastrous impact on an organization in some instances of IC risks occurring in real life. IC risks include, for example, employee turnover (experienced staff leaving the organization) (Harvey & Lusch, 1999; Parise, Cross, & Davenport, 2006) and reputation damage (product safety has serious problems) (Harvey & Lusch, 1999).

Among the typical IC risks in an organizations, knowledge leakage risk is by far one of the most pervasive and it can occur in different business functions or processes. By definition, knowledge leakage refers to the loss of knowledge to a third party which is owned by and resident in an organization for internal use only (Frishammar, Ericsson, & Patel, 2015). Knowledge leakage can take many forms and bring many disadvantages to an organization. For example, an organization may have developed a very effective sales/marketing software to streamline the sales process and reporting which is of great help in increasing the productivity of sales staff. If the design of the software is leaked to a competitor, the 'secret' of success may be replicated in a short time in the competitor's systems to enable it to enjoy the same benefits offered by the software. The organization's competitive advantage may be seriously affected, making the resulting costs of knowledge leakage quite obvious (DeLong, 2004). This example showed that the downside of knowledge leakage can threaten the survival of even a large corporation, but research in this type of common IC risk is still insignificant (Parker, 2012). In an attempt to fill this research gap, this study proposes a knowledge leakage assessment model driven by the Analytic Hierarchy Process (AHP). In the following sections, the building components of the model, methodology, benefits and examples of applying the model in the business world are discussed.

## **RISK ASSESSMENT AND ANALYTICAL HIERARCHY PROCESS**

In enterprise risk management, there are a number of frameworks in use today and COSO (Committee of Sponsoring Organizations of the Treadway Commission) (Curtis & Carey, 2012) is the most widely adopted by organizations. Typically, risk management involves identifying, prioritizing, responding to, assessing, monitoring and reporting risks. The risks may include physical risks like fire and earthquake and financial risks like interest rate instability and payment default. However, there is also an important category of risks not specifically addressed by these common frameworks but related to IC of organizations which must be effectively managed to ensure competitiveness and sustainability. These risks, arising from IC not properly managed, are called IC risks. Examples are: knowledge leakage, intellectual property (IP) loss and employee turnover. In this paper, the focus is on risk assessment component of a framework as applied to one of the most important IC risks - knowledge leakage. As for risk assessment, it refers to activities carried out in establishing assessment criteria and scope, determining likelihood and impact of risks, and prioritizing them (Hallikas, Karvonen, Pulkkinen, Virolainen, & Tuominen, 2004). Common frameworks like COSO (Curtis & Carey, 2012) and CAS (Casualty Actuarial Society)

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