

Leadership for Big Data and Business Intelligence

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INTRODUCTION

There has been very little written in recent years about Chief Knowledge Officers (CKOs). A Web search for the term can elicit a definition of the term and much less frequently, a job description at a particular organization.

Margaret Rouse (2008) provides this definition of a CKO at techtargget.com:

Chief Knowledge Officer (CKO) is a corporate title for the person responsible for overseeing knowledge management within an organization. The CKO position is related to, but broader than, the CIO position. The CKO's job is to ensure that the company profits from the effective use of knowledge resources. Investments in knowledge may include employees, processes and intellectual property; a CKO can help an organization maximize the return on investment (ROI) on those investments.

The FBI's Web site provides an illustration of a CKO's job responsibilities:

The CKO's focus is on how people, systems, and technologies exchange data, information, and content to meet the Bureau's goals and objectives. The Knowledge Office collaborates with other FBI components to maintain a knowledge management program that creates, captures, and shares timely, reliable, and actionable knowledge. As CKO, he specializes in cultural and business process change management and is responsible for a number of technological and collaborative improvements, programs, and platforms to share knowledge and expertise. (FBI, 2013)

If Web search results are any indication, the viability and visibility of CKOs has diminished over time. Academic research about the concept seems passé

and there appears to be little indication in surveying today's literature that the concept is still promoted as an essential organizational component for sharing information and expanding intellectual capital.

This seems unfortunate to me because there is now probably more need for a CKO than ever before. Today there are two critical issues that organizations must address: Big Data and business intelligence (BI). Big Data is a term that is used to describe the fact that the amount of data in our world has been exploding, and analyzing large data sets—so-called big data—will become a key basis of competition, underpinning new waves of productivity growth, innovation, and consumer surplus (McKinsey Global Institute, 2011). Business intelligence (BI) is an umbrella term that includes the applications, infrastructure and tools, and best practices that enable access to and analysis of information to improve and optimize decisions and organizational performance (Gartner IT Glossary, 2013). With the rise of BI and Big Data, there are urgent and critical organizational needs for intellectual brainpower with honed analytical skills, swift decision-making capabilities, and effective and strategic data management. All of these activities are related to knowledge creation. As a result, the position of CKO only has to be recast in the context of BI to understand its utility and value for today's organizations. To understand why this needs to be done, we should understand the relationship of BI and knowledge management and how the former contributes to the latter.

BACKGROUND

Many confuse knowledge management (KM) with business intelligence (BI). According to a survey by OTR consultancy (<http://www.otr-ict.com/solutions/consultancy.html>), 60% of consultants did not

understand the difference between the two terms. To clarify the disparity, Herschel and Jones (2005) state that business intelligence is any technology that is used by organizations to gather and analyze data to improve decision-making. In business intelligence, they assert, information is often defined as the discovery and explanation of hidden, inherent, and decision-relevant contexts in large amounts of business and economic data.

Alternatively, KM is the systematic process of finding, selecting, organizing, distilling and presenting information in a way that improves an employee's comprehension in a specific area of interest. Knowledge management is said to help an organization to gain insight and understanding from its own experience. Specific knowledge management activities help focus the organization on acquiring, storing and utilizing knowledge for such things as problem solving, dynamic learning, strategic planning and decision making.

Knowledge management incorporates two kinds of knowledge: explicit and tacit. Explicit knowledge is anything that can be written down. Explicit knowledge is rule-based when the knowledge is codified into instructions, routines, or standard operating procedures (Choo, 1998; Nonaka & Takeuchi, 1995). Data, text, algorithms, digital music, and video are all forms of explicit knowledge.

Tacit knowledge is what you know, but that is hard to describe (e.g., riding a bicycle). Tacit knowledge is knowledge that is uncodified and difficult to diffuse. It is hard to verbalize because it is expressed through action-based skills and cannot be reduced to rules and recipes. Tacit knowledge is learned through extended periods of experiencing and doing a task, during which the individual develops a feel for and a capacity to make intuitive judgments about the successful execution of the activity. Tacit knowledge is seen to be vital to the organization because organizations can only learn and innovate by somehow leveraging the tacit knowledge of its members. Despite its being uncodified, tacit knowledge can be and is regularly taught and shared. It can be learned by example. Tacit knowledge becomes substantially valuable when it is turned into new capabilities, products, or services (Choo, 1998).

Explicit and tacit knowledge are not independent or mutually exclusive. In fact, Nonaka and Takeuchi (1995) created a SECI [Socialization, Externalization, Combination, Internalization] Model to show that in

practice tacit and explicit coalesce. That is, there is a spiral of knowledge involved in their model, where the explicit and tacit knowledge interact with each other in a continuous process. This comingling exercise of knowledge leads to the creation of new knowledge. The central thought of the model is that knowledge held by individuals is shared with other individuals and information whereupon it interconnects to form new knowledge.

The SECI Model is extremely important in KM because it articulates the importance of both forms of knowledge and the relevance of both people and things to organizational learning and action. What it may not be so obvious to those in KM is that because of the explicit nature of BI, it provides an important means for revitalizing the importance of KM and the role of a CKO.

Issues, Controversies, Problems

BI is widely adopted in organizations and successful BI initiatives have been undertaken across major industries and for varied applications, including health care (Carte, Schwarzkopf, Shaft, & Zmud, 2005; Olinsky & Schumacher, 2010) security and event management (Lozito, 2011), telecommunications (Turban & Sharda, (2008) Web analytics (Iyer & Ramam, 2011) and Miller (2010).

In some ways the concepts of knowledge management and business intelligence are both rooted in pre-software business management theories and practices. It is possible that technology has served to cloud the definitions. Defining the role of technology in knowledge management and business intelligence – rather than defining technology as knowledge management and business intelligence – is a way to clarify their distinction.

Herschel (2011) defines BI as the application of data, technology, and analytics in the pursuit of insights and knowledge that enables decisions and actions that yield value for a firm. He asserts that BI creates value by providing evidence that organizations can use to make informed decisions about people, processes, products and services.

Figure 1. presents a vision of BI as an integrative application of technologies, models, techniques, and practices. In Miori and Klimberg's (2010) framework, each of the three circles of the Venn diagram represent

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