Chapter 1
Using a Revised Knowledge Pyramid to Redefine Knowledge Management Strategy

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ABSTRACT

The knowledge pyramid has been used for several years to illustrate the hierarchical relationships between data, information, knowledge, and wisdom. This chapter posits that the knowledge pyramid is too basic and fails to represent reality and presents a revised knowledge-KM pyramid. One key difference is that the revised knowledge-KM pyramid includes knowledge management as an extraction of reality with a focus on organizational learning. The revised pyramid includes newer initiatives such as business and/ or customer intelligence, big data, analytics, internet of things. Finally, this chapter discusses how KM strategy can be generated using the final revised pyramid.

INTRODUCTION

Much has been written on the knowledge pyramid, usually characterized as the data, information, knowledge, wisdom, DIKW, hierarchy and its use in knowledge management, KM. This chapter continues this discussion but takes a different position. It is posited that the knowledge pyramid is an artifact of KM processes and not an artifact of reality. This is a different position from authors such as Ackoff, Sharma, Bates, and Fricke that consider the pyramid as a natural expression of the relationships between DIKW and the logical progression for the generation of knowing through the creation of IKW (Ackoff, 1989; Bates, 2005; Miller, 1996; Sharma, 2004). This chapter also expands the DIKW hierarchy by considering the impact of big data, analytics, the Internet of Things, IoT, competitive intelligence, CI, and business intelligence, BI, on the DIKW hierarchy. Additionally; conversion and application processes between each layer are examined as KM processes and are incorporated into a KM process model.

Finally, this chapter will state definitions of terms important to KM, including definitions of data, information, knowledge, and intelligence. It is hoped that these can be accepted as working, consensus definitions, but it is recognized that these terms are philosophical in nature and can be debated as long as we want. This debate is embraced, but not encouraged, as I agree with Keen and Tan (2007) who believe that while it is important to understand KM terms, it is unproductive for researchers to get focused on trying to precisely define these terms at the expense of furthering KM research. The KM discipline needs to allow the debate but also needs to unite into a consensus set of working definitions. It is hoped this chapter will spur this consensus.

Methodology

This chapter focuses on concepts; however, the arguments made and conclusions presented are based on action research. The inspiration for this chapter comes from a project with a United States-based defense contractor. Specifics of the project and the company cannot be presented due to non-disclosure agreements. What can be said is that the company attempted to take technologies and experience developed/gained working with United States Department of Defense and other national intelligence agencies and generate a commercial knowledge management offering focused on providing KM tools and management processes. The author participated in this project as a KM academic expert responsible for providing KM focus and direction. It is participatory research per Burstein and Gregor (1999) as the author had a vested interest in the success of the project and in generating a commercial KM offering and was able to reflect on the project while participating. Specific data for this chapter comes from the company's initial presentation of what was considered to be a knowledge pyramid. This pyramid cannot be presented due to non-disclosure agreement. However, the pyramid can be described as a fusion of the traditional knowledge pyramid with KM processes and intelligence concepts. It was reflection and analysis of this pyramid and discussions with the project team that formed the basis of this chapter. The pyramid presented is the result of this reflection and is not at all similar to the project proposed pyramid.

THE TRADITIONAL KNOWLEDGE PYRAMID

References to a knowledge hierarchy can be found in the popular literature but generally Ackoff is given credit for the first academic publication. Figure 1 illustrates the traditional knowledge pyramid as originally proposed by Ackoff (1989). The inference from the figure is that data begets information begets knowledge begets wisdom. An additional inference is that there is more data than information, more information than knowledge, and more knowledge than wisdom. This model has been used in countless KM presentations and papers, and it is stated as a given truth that it is a generally accepted model showing the DIKW hierarchy (Fricke, 2007; Hey, 2008; Sharma, 2004). The model does not philosophically define data, information, knowledge, or wisdom, and it is not the purpose of this chapter to do this; there are many sources already available that make arguments supporting the various definitions. However, it is the purpose of this chapter to propose consensus, KM-focused working definitions. The traditional knowledge pyramid uses the following summarized basic definitions:

- **Data:** Basic, discrete, objective facts such as who, what, when, where, about something.

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