A Revised Knowledge Pyramid

Murray E. Jennex, College of Business Administration, San Diego State University, San Diego, CA, USA

Summer E. Bartczak, College of Business, University of Central Arkansas, Conway, AR, USA

ABSTRACT

The knowledge pyramid has been used for several years to illustrate the hierarchical relationships between data, information, knowledge, and wisdom. This paper 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 model also posits that newer initiatives such as business and/or customer intelligence are the result of confusion in understanding the traditional knowledge pyramid that is resolved in the revised knowledge-KM pyramid.

Keywords: Business Intelligence, Knowledge-KM Pyramid, Knowledge Management (KM), Knowledge Pyramid, Organizational Learning

INTRODUCTION

Much has been written on the knowledge pyramid, usually characterized as the data, information, knowledge, and wisdom, DIKW, hierarchy and its use in knowledge management, KM. This paper 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 in that several authors (Ackoff, Sharma, Bates, Fricke) consider the pyramid as a natural expression of the relationships between DIKW and the logical progression for the generation of IKW (Ackoff, 1989; Bates, 2005; Miller, 1996; Sharma, 2004). This paper proposes that the natural relationship between DIKW is actually an inverted pyramid, and that the knowledge pyramid is an artificially constructed artifact representing the relationship between DIKW in an organizational KM context.

Additionally, while the current knowledge pyramid expresses only the hierarchical relationships between DIKW, this paper shows that the revised knowledge pyramid can also represent KM-related process flow relationships. This is a conceptual paper that hopes to promote discussion and insight by researchers into the nature of KM and its relationship to the overall processes of learning. Another goal of this paper is to create a model that illustrates the natural integration of KM and Business Intelligence, BI, and/or the other “intelligences” such as Customer Intelligence, CI. It is also expected that this discussion will generate a better understanding of KM processes so that better KM systems, KMS, can be designed to

DOI: 10.4018/ijkm.2013070102
better fit the needs of KM users. Finally, this paper 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 paper will spur this consensus.

Methodology

This is a paper that focuses on concepts; however, the arguments made and conclusions presented are based on action research. The inspiration for this paper 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. One of the authors 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 paper 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 presented pyramid can be described as a fusion of the traditional knowledge pyramid with KM processes and intelligence concepts.

It was analysis of this pyramid and discussions with the project team that formed the basis of this paper. 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 paper to do this; there are many sources already available that make arguments supporting the various definitions. However, it is the purpose of this paper 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.
- **Information**: Data that is related to each other through a context such that it provides a useful story, as an example, the linking of who, what, when, where data to describe a specific person at a specific time.
- **Knowledge**: Information that has been culturally understood such that it explains the how and the why about something or provides insight and understanding into something.
- **Wisdom**: Placing knowledge into a framework or nomological net that allows the
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