

Chapter 5

Universal Index for Information Collections, Physical and Virtual: Information Experts Merging IT and Collection Management for Real Solutions in the User Environment

ABSTRACT

Data organization is an area of research and development, which has, oddly enough given that this is the Information Age, stagnated almost entirely in the library field. With the massive addition of virtual collections and the steady expansion of print and multimedia publications, the desperate need to develop more efficient indices handling the organization of ever-larger amounts of data is mandatory for continued progress in any meaningful way of collection development. This field has been dominated by non-library organizations, such as governments and corporations, leaving libraries woefully behind. Eventually, massively joint collections developed in a mostly virtual environment, accessed mainly through networked portals such as through the Internet, must come to grips with a truly universal index that spans both the physical and virtual material. The days of LOC are gone—it is a labor intensive system totally unprepared to harness today's and tomorrow's information technology. The new indices must be primarily automated and user friendly, harnessing all levels of traditional inventory control—balancing each level's weaknesses with their inherent strengths. We have the levels, we just need to re-formulate them into a stronger matrix, scalable to current and future information technologies. Outlined here is one such indexing technology: the KATIE Universal Indexing System. Surveyed in this chapter is a review of this driving technology and its applications, covering the NITA Methodology Stage-I, Stage-II, and Stage-III in its developmental process.

DOI: 10.4018/978-1-4666-4739-8.ch005

INTRODUCTION

Data organization is at the core of all collections of information, whether it is a fundamentally physical, virtual, or as in most modern cases a collection that is a hybrid of the two. The organization protocol used in the catalogs of each of these collections becomes the glue that holds the data together in meaningful groupings as well as making information retrieval possible from multiple patrons and/or acting as a primary source for multiple sub-indices. That is of course if the catalog structure is well thought out and implemented properly. Oftentimes, modifying the data organization protocol (i.e. the indexing system) is enough to modify the use and feel of an entire collection even though the contents of the collection remain the same. This is not to be confused with user interface concepts and technologies, such as with computers as in the important and common term of Graphic User Interface (GUI) and the equally important, though now less common, Command-Line Interface (CLI). User interfaces are the proverbial clothes on the mannequin. Though an efficient and user-friendly interface is important to a good catalog, their many other internal logic that must be considered first. This chapter considers the challenges to indexing and presents a robust solution.

Efficient data indices provide more options and ways for users, through the user interface, to mine the data more effectively as well as provide opportunities for collateral discoveries in the research process. In this way, supporting both specific data discovery and collateral discovery capabilities such as the case with browsing are both equally important in the functionality of any comprehensive index systems. The third important consideration, and the one predominantly lost track of by past and contemporary index systems alike, is the dynamic nature of data itself. Too often we think of data as unchanging, thus we create unchanging indexes to organize it. Even if the data is unchanging, the way in which we understand

the data is always evolving—whether it is through the terms, tags, and languages we use to describe it or the ever-dynamic basic concepts humanity uses to understand the world around it. The philosopher of science, Thomas Kuhn, speaks of the concept of ‘paradigm shift’ within the scientific community: the relationship of concepts in which we filter all our perceptions through—essentially the way we see our world—and in a way, predetermine its conclusions (1962). Case in point is the Western European Medieval scholasticism’s focus on understanding all natural concepts through the filter of Roman Catholic ideology, even to the point of suppressing any concepts and systems not conforming to these preordained premises as heretical and destructive to the social structure. The recreation of entire fields of science, ethnology, and culture by the Nazis and Italian Fascists regimes in the 1930’s and 40’s is another tangible example. Western European culture is not the only culture to have undergone extreme changes in conceptualizes of data management. Noted are the extensive historical debates over the alleged 7th century burning of the remnants of the famous Library of Alexandria soon after the Arab conquest of that historical Egyptian city (in 21 H/641 CE). As the perception of learning stood at the time, the dismissive Caliph Umar stating that the Quran was enough for all concepts of understanding, consigned the remainder of the volumes to the fire as commented on by the thirteenth century Syriac Orthodox Bishop Gregory Bar Hebræus (died 1286), called Abû ‘l Faraj in Arabic (Pococke, 1663). This is in relation to the highly developed works in science, medicine, and mathematics found in the Islamic world of the 9th through 15th century, yet another huge paradigm shift from the age of Caliph Umar. Whether the 7th century historical event is true or not—our source lived over six centuries after the supposed famous event—the medieval account serves to illustrate a classical conception concerning information control and paradigm shifts in learning, in this case, one filtered through the lens of religious

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