

Chapter 8

Supporting Information Behavior over the Ages

To understand the evolution of things, one must understand something about their history as well as the environmental forces that had shaping influences upon them.

(Pirolli, 2007, Preface)

As Pirolli reminds us, many forces shaped the emergence of information behavior and many artifacts were developed over the centuries to support information behavior in different cultures. Information behavior has been an important aspect of human behavior from early humans such as *Homo sapiens* and also for the people of today.

Over the centuries people have used their ability to engage in information behavior and various artifacts were created to support these information behaviors. Obviously the creators of these artifacts realized that information behavior existed in humans and themselves, and therefore needed to be supported. This was a complex intellectual undertaking, but we saw the development of different types of artifacts over the centuries.

Information behavior has been an important element of daily life over the centuries (Spink & Cole, 2005, 2006, 2007). Humans have used their information gathering, organizing abilities for military, scientific and personal purposes. Many people use their information organizing and using behaviors to create personal libraries to support information gathering behaviors. Classifying papers or books by subject was also a common behavior even before the development of cataloguing schemas by Dewey and Otlet.

This chapter briefly reviews the latest thinking on what we know about how information behaviors were, and still are, supported by different artifacts and technologies over the centuries. The artifacts developed to support information behavior changed over the centuries from cave art to clay tablets to libraries, printed books and organizing schema, to today's computer technologies, the Internet and the Web.

This chapter is not a comprehensive overview of the artifacts that humans developed to support their information behaviors. These artifacts are discussed extensively in the scientific literature (Borgman, 2003; Wright, 2008).

Time Period	Artifacts Supporting Information Behavior
30000 BC	Cave Art or Paleoart
6600 BC	Ideographs
4240–3000 BC	Calendars, Paper (Papyrus), Cuneiform
2700–1300 BC	Ink, Hieroglyphs, Alphabet, Phaistos Disc, Logographs, Maps
1250–500 BC	Scrolls, Manuscripts, Glossaries, Dictionaries, Paper(Parchment)
320–8 BC	Library, Bibliographies, Concept of Categories, Library Classification System
79–1200 AD	Codex, Woodblock Printing, Tree Diagram, Quill Penn, Library Catalogue, Movable Type, Almanacs, Paper (Rag)
1309–1626 AD	Registers, Printing Press, Bookbinding, Public Lending Library, Library Catalogue (Printed), Dictionaries, Newspapers, information Graphics
1735–1900 AD	Taxonomy (Binominal), Magazines
1900 AD–Today	Marc (Metadata), Hyperlink, Internet, Web, Digital Libraries.

Fig. 8.1 Information behavior and artifacts created over the centuries to support information behavior

Figure 8.1, adapted from Bergman’s Timeline of Information History (http://www.mkbergman.com/?page_id=327), provides a summary of the significant events and developments in the innovation and management of information and documents from cave paintings (ca 30000 BC) to the present.

Figure 8.1 shows some of the artifacts created by humans over the centuries to support information behaviors from early to modern humans. Over the centuries we can see the development of different forms of artifacts that supported human information gathering, organizing and use behaviors.

Information Artifact Timeline

Around 30000 BC, as we saw in earlier chapters, cave art or paleoart were early example of humans’ creating artifacts to support their information behavior by drawing images of animals.

By 6600 BC early humans had developed ideographs that were proto-writing systems of ideographic, mnemonic symbols or scripts that could be markings on artifacts. The earliest example of an ideograph is a prehistoric tortoise shell with 16 markings from Jiahu, China.

From 4240 BC Egypt we see the first calendar – the civil Egyptian calendar that was divided into 12 months with 365 days. The period BC in human history also saw the development of paper made of papyrus in Egypt and cuneiform as the earliest form of written expression by the Sumerians.

During the period 2700 BC–1300 BC the next group of artifacts created to support information behavior were developed in the second and third centuries BC, including ink, alphabet, hieroglyphs and maps. These artifacts supported humans' information organizing behaviors and the human ability to then find certain types of information, e.g., in 1800 BC alphabets or writing system with characters emerged in Egypt during the era of the military leader Alexander, the philosopher Plutarch and military historian Xenophon (Russell, 1999).

Information behavior is also evidenced during the *eighteenth century BC and the fourth century BC* with Xenophon, Aeneas Tacticus, and Alexander (Russell, 1999; Spink & Currier, 2006c). Classical Greek was an information age (Payne, 1993) with the move from an oral to written culture that transformed information behaviors (Spink & Currier, 2006c). Payne (1993) discusses the information behaviors of Herodotus and Theophrastus. Herodotus collected his information from a variety of sources including logographers (historically oriented storytellers), city and temple archives, inscriptions such as those on monuments, and Egyptian priests (Payne, 1993; Spink & Currier, 2006c).

Maps first emerged during the *fourteenth–twelfth centuries BC* in Babylon and 16,300 years ago in the Lascaux caves showing the sky and stars. The second and first centuries BC saw some important artifact development including scrolls or papyrus rolls of parchment for information organization and use.

Artifacts such as manuscripts, glossaries, dictionaries and parchment paper developed during the period 320 BC–8 BC. In the last century BC, more systematic ways of thought led to the development of bibliographies or lists of publications, books or articles, and the conceptualization of categories, paper libraries, and the first classification systems for libraries. The Royal Library of Alexandria in Alexandria Egypt was the largest library in 280 BC with between 500,000 to 1 million scrolls.

The first two centuries AD from 79 AD to 1200 AD saw the development of more cognitive complex artifacts to support information organizing and finding behaviors, including the codex, woodblock printing, tree diagrams, quill pen, library catalogues, movable type, almanacs and paper made from rags. Library catalogues, as a register of bibliographic items in a library, were first used in medieval and Islamic libraries.

From 1309 AD to 1636 AD at the beginning of the Renaissance Era we saw the development of the printing press as an artifact that supported information gathering, organizing and using behaviors. Other artifacts were developed including registers, bookbinding, public lending libraries, library catalogs (printed), dictionaries, newspapers, and information graphics. In particular, public lending libraries were environments where people could explore their information behavior abilities. Library catalogs were also developed to support the more effective human use of information behavior abilities.

From *1700 AD to Today* we saw the development of a new range of more complex information behavior supporting artifacts, including binomial taxonomies, magazines, machine readable catalogs (Marc) with metadata, hyperlinking, the Internet, and the Web (Borgman, 2003; Wright, 2008).

Summary

How and why these artifacts were developed to support certain information behaviors is an interesting area for further research. Who were the people who developed the artifacts and did they conceptualize the behaviors their artifacts would support in psychological terms? The thought processes and social influences on the development of these information behavior supporting artifacts is a fascinating realm of inquiry.

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