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Encyclopedic knowledge in the mobile age

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Encyclopedic Knowledge in the Mobile Age

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A walking encyclopedia for the new generation?

'A walking encyclopedia' is an expression used from time to time to describe a very knowledgeable person. It seems to encapsulate the values of ready access and comprehensive coverage suggested by the terms of the expression, whilst also denoting a human presence that may enhance, or perhaps just differ from, what could otherwise be obtained from a book. Whether in print, on digital media or inside someone's head, exhaustive, all-embracing information easily accessible in one go has always been valued and continues to be so. On the web, the single portal is still the 'holy grail' (e.g. Schreibman, O'Brien Roper and Gueguen, 2007). The question arises as to whether mobile and pervasive technologies are set to make a difference.

At the start of the 21st century, the explosion of information and increasing need to stay in constant touch with the latest developments has created new conditions and unfamiliar demands on individuals and organizations. It is easier to be informed about events happening remotely or knowledge produced in a distant part of the world, but paradoxically, this creates an additional imperative to understand a different context. To fully appreciate the context, it may be necessary to understand some aspects of a foreign language and culture: even when the language is known, or a translation is available, incorrect assumptions and nonequivalence are commonplace. So distributed information has become easier to access but it can be difficult to interpret and assimilate into a person's current knowledge and understanding.

Human cognitive challenges include the capacity to take in a great deal of information, the ability to make sense of it and to make further connections. The translation into English of Pierre Bayard's "How to talk about books you haven't read" (2007) has recently highlighted common insecurities about extensive reading and how apparent shortcomings, such as not having finished reading a book, might even be reinvented as advantages. Writers have always had a good appreciation of this issue. The author Claire Messud describes a woman's apartment filled with books, some of which were "acquired for courses and never read… but (…) suggested to her that she was, or might be, a person of seriousness, a thinker in some seeping, ubiquitous way" (Messud, 2006, 107). There is more than one way to use a book, and the environments where books are kept and talked about often have their own significance, providing a new context for these works and their associations with related writings and ideas. With new web publishing technologies such as blogs, the allure of sampling, commenting and making connections, without having spent much time on a single item, may be ever stronger.

A focus on encyclopedic knowledge should not be taken to imply that this type of knowledge is uniquely valuable, however the aim of this chapter is to shed some light on

the changing nature of all-encompassing collections of represented knowledge, how knowledge may be socially constructed and shared, and whether perspectives may be shifting due to greater mobility and travel. As a publication, a general encyclopedia is also of special interest as it responds to reader needs for entertainment, informal learning and formal study -- being used to find answers to questions in a lighthearted quiz, for general interest or more serious study. As such, it tends to have a reputation for being interesting and useful as well as authoritative. New manifestations of encyclopedias on the web attest to the enduring appeal of gathering together and disseminating what is known about a broad range of topics. At the same time, the scale and nature of knowledge sharing on the web differs in many respects from traditional formats. The proliferation of portable and pervasive technologies is introducing further changes that we are only beginning to understand.

Travelling towards knowledge

Back in the age of the French Enlightenment, Diderot and d'Alembert worked with a circle of colleagues on an ambitious project to create an encyclopedia that would change "the common way of thinking", through the expansion of knowledge and the development of critical thought. The thirty-two volumes of the encyclopedia made available during 1751-1777, covered topics from the sciences and the arts as well as a great deal of technical knowledge, supplemented by no less than eleven volumes of beautiful illustrations that enhanced the encyclopedia's visual appeal and helped to communicate its ideas. As part of their mission, the encyclopedists were keen to emphasize the merits of travel; Jaucourt explained how in the past, "famous travellers [would go to Egypt] in order to profit from the conversation of the priests of the region, who alone possessed the reflective sciences"…and went on to say that travellers "develop and raise the level of the mind, enrich it through knowledge, and cure it of national prejudices"… "such study cannot be replaced by books or by the tales told by others. Men, places, and things one has to judge by oneself" Jaucourt (n.d.) So this was an exhortation to travel, but with the explicit aim of developing the mind and influencing society upon one's return.

Fast-forward to the beginning of the present century and a world in which encyclopedic knowledge has been represented countless times in a multitude of ways and on different media. In this world, books and libraries can sometimes seem outdated, yet we continue to develop our understanding of what it is they offer that is not always otherwise available in the digital era. In San Francisco, a city often associated with the high-tech 'silicon valley', there is a small research library which aims to demonstrate the fluidity of classification and the importance of social interaction in sustaining a living collection that keeps evolving through human contact, serendipity, and discussion in the aisles (Lewis-Kraus, 2007). The creators of the Prelinger Library explain on their website why their physical library is important:

> Now that many research libraries are economizing on space and converting print collections to microfilm and digital formats, it's becoming harder to wander and let the shelves themselves suggest new directions and ideas.
>
> (Prelinger Library – Why We Built This Library, 2008)

Items on the shelves are therefore organised so as to encourage discovery, principally by having maps, documents, books, periodicals and so on, all shelved together within subject headings. Someone looking for a book might accidentally discover a relevant map or a periodical located right next to it. Furthermore, items to be found in this library have strong connections with local events and people: "The library's flow of subject matter starts with where we are, with the local" (Prelinger, 2004, para 7). This local context gives depth of meaning to items found in the library; but once they have gained local knowledge, library users are encouraged to take photographs of copyright-free materials to share with others on digital media.

Knowledge construction and sharing in the digital age

"A library is often assumed to be just a repository of information. But libraries are more than this, and there is a danger that in the rush to networked information we will lose the significant non-informational (what we call "situational") features of libraries" – this was a warning given by Reich and Weiser in 1993 (p.1). They had identified certain library functions that met essential human needs, in particular the needs of local communities. Looking twenty years ahead into the future, i.e. approximately 2013, they predicted that libraries might loan portable devices to members of the local community who want to follow some community activity, e.g. their local football team. The devices would be programmed to follow that activity and there would be no need to log on, know any commands, or do anything other than glance at the device from time to time. 'Networked posters' could serve a similar function, they suggested, being taken home and put up on the wall, remaining connected to a steady display of community information, updated daily by the library.

Interestingly, Reich and Weiser (op.cit) advocate using physical proximity as a way to control access, so that some local information would be easily available only to locals, thereby protecting their sense of community. Furthermore they contend that "the physicality of communities is part of their charm and value. The man who has never been more than five miles from home adds community value by the richness of his knowledge of those five miles, and by the reduced dilution of that knowledge from the outside." (Reich and Weiser, op.cit). Do we see things differently today? The richness of local knowledge ought to be valued still. Technology has the power to change how it is captured and shared, but with personal handheld devices increasingly in the hands of the public, the idea of totally controlling how local knowledge is accessed may seem passé. Yet echoes of a protective attitude may be detected amongst those who today design digital services and systems allowing users to choose whom they wish to invite to be part of their online set of friends, community or local interest group. Completely open access (e.g. global) is not always appropriate, it is not always the most effective for participants and it is not necessarily preferred. Tensions between local knowledge and more widespread sharing must continue to be explored and resolved.

'Not a Walking Encyclopedia' is the title of a blog whose author reviews books she has read as well as writing about her diverse interests and hobbies (Schultz, 2008). Like many other bloggers, she shares her everyday experiences with whoever cares to read about them, along with her perspective on life and some of her specialized and local knowledge. The incremental and sometimes unpredictable environment of a blog can be contrasted with highly organised web publishing activity such as Wikipedia (2008). Wikipedia has become a household name in the past few years, although it was not the

first project of its kind and it is not the last. h2g2, 'an unconventional guide to life, the universe and everything', was launched in 1999 and has been hosted since 2001 by the BBC (h2g2, 2008); Citizendium was started by a Wikipedia founder and emphasizes 'credibility and quality, not just quantity', which includes the use of contributors' real names (Citizendium, 2008). In December 2007, the official Google blog reported that a new tool called "knol" was being tested for collaborative knowledge creation, also stressing that knowing who wrote an article will help users make better use of web content (Manber, 2007).

Another popular way of sharing encyclopedic content on the web takes the form of questions and answers, for example within WikiAnswers (2008), which states on its home page that "You don't need to be an expert. Thousands of people just contribute a few tidbits of new information, or improve spelling and grammar". Other sites specialize in particular media formats, e.g. SuTree (2008), a site for instructional and educational video sharing which also encourages communities of interest and course creation. In yet another approach to collaborative knowledge generation, InnoCentive (2008) connects 'seekers' and 'solvers', with the offer of financial rewards for best solutions to open challenges in areas such as science and engineering.

Enabling cultural discovery

The web has opened up endless possibilities for collective knowledge representation and collaboration. I believe the next challenge is to see if we can move towards a better appreciation of the diverse cultural contexts that give rise to different ways of describing and organizing knowledge. As suggested earlier in this chapter, distributed information has become easier to access but interpretation of it still poses interesting challenges. People's Daily Online reported some time ago that the National Library of China is setting about digitizing the 'world's earliest and greatest encyclopedia', the great Encyclopedia of Yongle, dating from the 15th Century. Assuming this will one day be freely accessible online, understanding the contents will be no easy matter. The same applies to more recent creations: Baidu Baike is a Chinese language web-based collaborative encyclopedia available since 2006. In terms of translation, the introduction by Google of language tools that allow users not only to request a translation for a web page, but significantly, to suggest how the translation might be improved, seems a notable stride forward. Potentially it can raise the quality of translation and also engage people by making use of their skills and knowledge; perhaps no less significantly, it can draw everyone's attention to the fact that translation is an act of interpretation and not a mechanistic process.

The issue of how technology can truly support people in getting to know other cultures and their perspectives on the world does not currently receive a great deal of attention. Mobile technologies are often used to perpetuate the view that a handful of phrases in another language, along with practical information for travellers, is all that is needed. Business travellers can often access such information on their handheld computers (e.g. Discover Hong Kong, 2008). As has been pointed out by Jaokar and Fish (2006), the mobile phone is fast becoming a 'security blanket' (p. 87) and in the future, mobile users may be able to generate queries that will trigger multilingual information retrieval and natural language processing technologies to return relevant information in the user's native language.

Conclusion

Themes emerging from this reflection center on ready access to knowledge, but combined with a deeper understanding of the contexts in which it is created and with an emphasis on the human, local, and community perspectives mediating all knowledge. Mobile access to encyclopedic web content has not yet had a significant impact on the nature of what is represented and how communication takes place among contributors or community participants. Travel – whether physical or virtual – represents a unique opportunity to engage with another culture. Automatic translation both facilitates that engagement and obscures the differences that direct knowledge of another language and culture can reveal. This is a difficult paradox that needs to be noticed and analysed so that it can be properly addressed and reflected in the design of environments for knowledge creation and sharing.

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