

Chapter 9

The Inevitability of Library Automation

Edward Iglesias

Central Connecticut State University, USA

ABSTRACT

Library automation is considered in terms of technological directionality citing sources from various disciplines including the work of various theorists in the field. A brief history of library automation is followed by a look at library organizational structure and how it might be affected by technology in the future just as it has been by technology in the past. Finally, with a strong nod to pioneering economic theorists Brynjolfsson & McAfee there is a discussion on how Artificial Intelligence will affect library jobs and organization in the future. This chapter looks at the history of library automation within the context of technological directionality. Much has been written about the history and evolution of libraries, but less as to the eventual consequences of automation. The author seeks to correct this by looking at how current workflows and departments will be impacted by the use of Artificial Intelligence in automated processes to take over work formerly done by trained library professionals. For the purposes of this chapter, these AIs and automated processes are referred to as robots, that is, automatons which take over work formerly done by humans. Finally, some suggestions will be made as to how a library might be restructured in light of these developments.

A BRIEF HISTORY OF THE AUTOMATION IN LIBRARIES

The history of the automation of libraries is well documented and this section merely seeks to point the reader in the direction of some of the best sources. For a timeless look at library technology

in general see Norman Steven's excellent chapter A Popular History of Library Technology in Library Technology 1970-1990: Shaping the Library of the Future (Nelson, 1991, pp. 1–3). Starting at a similar point John Burke's Library Technology Companion illustrates “ten key developments in information technology” starting with writing and paper and making its way through to “A

DOI: 10.4018/978-1-4666-4607-0.ch009

Techno-Savy Populace and a Society that Requires Technology” in eight pithy pages (Burke, 2009, pp. 5–13). Of greater relevance to this work is Burke’s observation of the “two main goals” of library technology adoption “better servicing the needs of the library’s community and streamlining the workflow of the staff” (Burke, 2009, p. 4). It is this motivation of library technology that is the key in understanding the logical outcomes of such efficiencies in productivity. Finally, the recent book *Parents of Invention: The Development of Library Automation Systems in the Late 20th Century* by Christopher Brown-Syed is excellent especially for his intellectual bracketing of the “Era of Conceptualization” vs. the Era of Commercialization” (Brown-Syed, 2011, pp. 1–4). His tracing of the current developments of LAMP based servers, ILS systems and discovery layers to the days of microcomputers and well thought out decisions is truly inspiring.

Looking further abroad to over arching concepts in technology there are several books that are quite relevant. In *What Technology Wants* Kevin Kelly argues for a sort of evolutionary determinism that he refers to as the Techium. The Techium is defined as “the greater, global, massively interconnected system of technology vibrating around us” (Kelly, 2010, chap. 1). Kelly argues that certain inventions have an inevitability about them and even goes so far as to postulate technology as another Kingdom that in a sense evolves. What technology wants is, among other things, increasing complexity. This is true of all biological creatures that evolve so why not technology? From the view of a Librarian looking at technology this view is fascinating. Libraries have always been involved in technology. After all, all writing and books are a form of technology. Some of the earliest records extant are protocunieforn clay tablets have written on them an accounting of agricultural production so the organization of information is also one of our earliest inventions (Powell, 2009, p. 70). A central storehouse of information or library was an early

technology that librarians were the inheritors of. Whatever the Techium may be, we have a long relationship with it.

If we accept that there is an inevitability to technological progress then it stands to reason we should at least try to understand where that current of technology is going in our libraries. The question is not whether we will be swept along, but whether we will be drowned. Right now there are many in the library field struggling valiantly to keep certain esoteric arts from dying. These include humans doing copy cataloging, checking books in and out, Inter-Library Loan not to mention Authority control. All of these actions can be performed better and more cheaply by automata, robots if you will. It does not matter for purposes of this discussion if the robot is a piece of software that does Patron Driven Acquisition drastically changing what a Collection Development Librarian is and does or shelf ready books that eliminate backlogs and are orders of magnitude cheaper than a cataloging department. What matters is that machines or pieces of software are doing the jobs that used to be done by humans more cheaply and effectively. This is inevitable. The only choices left to those who work in libraries currently are to leave the field or acquire new skills. Undoubtedly there will be a few who resist change and just want to hang on until retirement but they will need to find new ways in which to contribute.

This issue needs to be addressed on a wide scale. Other chapters will focus on factors from the demise of the cherished ILS to the actions that will become necessary by library directors as they struggle to keep the library relevant in an Academy that itself is under attack from multiple fronts to case studies from pioneering libraries who have already taken the first few steps. Nothing here should be earth shaking or overly controversial. It has been spoken about at library conferences, written about in many articles, but to my knowledge this is the first systematic treatment of the effects of automation as a whole in the near future of academic libraries.

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