Chapter 9
Managing and Adapting Library Information Services for Future Users:
Applying Artificial Intelligence in Libraries

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ABSTRACT

The advance of artificial intelligence (AI) as a field of computer science that can impact and improve all sciences and human interactions is changing the information sector. AI is reconfiguring many library tasks such as classification, indexing, cataloguing, information retrieval, reference, information literacy, and even learning. It is the greatest usable intelligence that has the capacity of assisting librarians in decision making and administration. AI can also be employed in various areas such as speech recognition, machine transformation, and librarian robots. The very disruptive nature of any novel technology can be perceived as a risk to many organizations, including libraries. However, the ultimate acceptance and integration of artificial intelligence into library services is indeed possible and beneficial.

DOI: 10.4018/978-1-7998-1116-9.ch009

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INTRODUCTION

According to Stern (2010), Artificial Intelligence (AI) is the science and engineering of making intelligent smart machines and devices, that are able to learn new concepts and tasks, reason and draw useful conclusions about the world around, understand a natural language, comprehend a visual scene and perform other types of feats that ordinarily require human types of intelligence. AI makes use of concepts from various fields including, cybernetics, information theory, psychology, linguistics, logic and computer aided instruction. Furthermore, AI assists machines to find solutions to complex problems in a more human-like fashion, which generally involve borrowing characteristics from human intelligence and applying them as algorithms in software programmes.

The most popular artificial intelligence programmes are the specialized computer systems that embody human elements of human intelligence and create electro-mechanical devices that are capable of performing tasks done by human beings as well as processing ideas and knowledge. This increases the rate of automation and mechanization where the routines and receptive jobs or operation are left to be performed by machines with little or no intervention by human beings. It also implies a lesser degree of human intervention, although it does not mean that automation does away with human beings. On the contrary, human beings are relieved of routine chores, giving them more time for tasks which require their intelligence.

Modern libraries have evolved from centralized, paper-based computer systems into distributed networks of digital and non-digital materials, providing innovative library services as well as traditional services. With the dramatic increase of available materials and user expectations, libraries are forced to exploit new technology to fulfill their missions with relatively limited resources. AI has great potential for libraries as it can perform routine computer-input duties. Artificial intelligence may also have the ability of reasoning, planning, learning and collaborating with users or other agents in libraries. AI techniques and tools have also been adopted in many areas, including industrial control, medical diagnosis, stock trading, personal assistance, games, scientific discovery, information retrieval, business management and even the military.

Library and information science also has developed in using intelligent computer systems. Library operation and management requires the performance of a number of repetitive, painstaking, labor and time-intensive activities. Hence, in order to increase efficiency and effectiveness, many libraries are moving towards automation of the majority of their activities. Artificial intelligence techniques give more accuracy to actuation of libraries. The ideas of the utilization intelligent system instead of classic system in libraries started from 1990. Intelligent library computer systems

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