

Chapter 1

From Industry 4.0 to 5.0: Digital Management Model of Personnel Archives Based on Transition From Digital Manufacturing

Sakthivel Velusamy

Vellore Institute of Technology, Chennai, India


B. Suresh Kumar

The Kavery Engineering College, Mechery, India

S. Raguvaran

*KPR Institute of Engineering and Technology,
India*

T. Padmapriya

 <https://orcid.org/0000-0002-9766-4203>
Melange Publications, India

S. Vinoth Kumar

*Vel Tech Rangarajan Dr. Sagunthala R&D
Institute of Science and Technology, India*

ABSTRACT

Industry 4.0, often known as the fourth industrial age, connects the physical world with its digital counterparts, or “virtual twins.” This chapter discusses cutting-edge technologies, from IoT to emerging intelligence, that are being created by the organizations where the researchers work. The authors believe that the convergence of these advancements will make it possible to move from Industry 4.0 to Industry 5.0. This research undertakes extensive research on retrieving technology to enhance the efficiency of managing employees’ archiving information in light of Industry 4.0. This study discusses the foundations of knowledge retrieval, and the retrieval model to solve the shortcomings of the current sorting algorithms. This chapter uses the concept of Industry 4.0 to develop the digital management framework for employees’ archive data. The investigational findings demonstrate some effects of the digital administration approach on personnel archives described in this research.

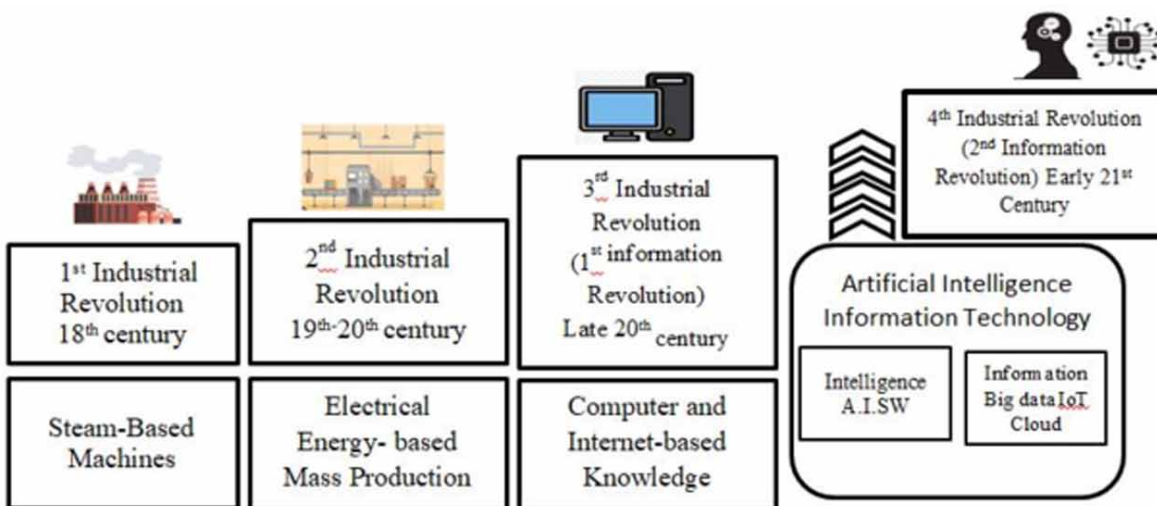
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1. INTRODUCTION

Manufacturing businesses are becoming more aware of the need to boost productivity and effectiveness. They rely on modern technology to accomplish this by lowering costs and raising profits. The term “industry 4.0” is widely used to describe this expanding use of technology. Also known as “the fourth industrial revolution (Ahsan & Siddique, 2022),” it is. German academics first used the phrase “Industry 4.0” at the CeBIT forum conference in 2011. Since then, it has grown to be one of the most frequently used terms to describe a procedure that enables factories and companies in all sectors to communicate with internet-based technologies like 3D printing, robotics, additive manufacturing, cloud computing, big data, and more recently robotics, and artificial intelligence (AI).

A new economic paradigm known as Industry 5.0 arose very soon after Industry 4.0, igniting debate about the goals and grounds for the use of the new paradigm. The foundation of Industry 4.0 is the concept of a “smart factory,” where intelligent products, storage devices, and data are combined to create “cyber-physical operational systems.” Technically speaking, Industry 4.0 has enhanced human-machine interaction, but in terms of social sustainability, the technological changes brought about by Industry 4.0 should carefully take into account the crucial role that people play. The COVID-19 pandemic brought attention to the importance of employees, and the global pandemic itself caused an overhaul of the Industry 4.0 model. Industry 5.0 was therefore envisioned as an advancement of Industry 4.0 that also included a social and environmental dimension in Figure 1. Industry 5.0 is divided into two main areas: production process flexibility and environmental effect, and the abilities, expertise, and skills of workers to work with computers and robotics.

Figure 1. Fourth industrial revolution and AI's impact on human existence



Individuals must have solid connections with technology if we want to ensure sustainable progress across all societal domains (such as health, schooling, freedom, and economics). On the contrary, this raises the question of whether AI will harm people (in terms of, among other things, employment losses,

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