



SOCIETY 5.0 AND THE TRANSFORMATION OF AFRICAN LIBRARIES: OPPORTUNITIES, CHALLENGES, AND STRATEGIC PATHWAYS

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Abstract

To explore the implications of society 5.0 for African libraries and propose a strategic framework for engagement. This conceptual paper is based on a comprehensive review and thematic analysis of literature on Industry 5.0, Society, and library and information science. The study identified key challenges relating to infrastructural deficits and skill gaps such as dearth of skilled and competent information professionals, reluctance in embracing technological changes, low level of innovative capacity, non-existence of digital-related policies; and outlines critical strategic priorities to include the procurement of digital infrastructures required for digital-related services, developing innovative and creative capacities, engaging in strong and reliable collaborative programmes, adoption of strategic leadership approach, formulation of viable digital-related policy and retraining of library and information science professionals. This paper advocated the need to systematically apply the Society 5.0 framework to the African LIS context, moving beyond descriptions of Industry 4.0 to propose a human-centric, sustainable pathway for library transformation. revolutionizing libraries and information centres within the context of society 5.0 is in consonance with fifth law of library science that the library is a growing organism. Revolutionizing library services requires a paradigm shift towards innovation, collaboration, and strategic investment in both technology and human capital.

Keywords: Digital Transformation, Fifth Industrial Revolution, Human-Machine Collaboration, Smart Library Services, Society 5.0., Technological Integration.

Introduction

The world has passed through industrial revolution, each with its peculiarities and all were driven by technological development from the first industrial revolution to the present revolution, technological changes have always been the force behind the revolution. The world presently is under revolution being driven by massive technological advancement. Historically, human civilization has transcended from one level of changes to another and these changes are being propelled by technological developments that are undeniable. These changes no doubt, are affecting different aspects of human life. However, since the first industrial revolution began in the 18th century, progress has not come to a standstill. The world is changing dizzyingly fast between one revolution and another (Gajdzik, 2023; Cortes & Cortos, 2022).

The Industrial Revolution encompassed the substitution of human labour with mechanized automation, alongside a shift from artisanal workshop production to large-scale factory systems, and from hand-operated tools to sophisticated, high-volume industrial operations powered by advanced machinery. Society 5.0 is a society in which advanced IT technologies, Internet of Things, robots, artificial intelligence and augmented reality are actively used in everyday life, industry, healthcare and other spheres of activity, not primarily for economic advantage but for the benefit and convenience of each citizen. Both Society 5.0 and Industry 5.0 embody a pivotal evolution, redefining the core principles of human society and economic activity within a groundbreaking paradigm (Breque, Denul & Petridis, 2021). The era of society 5.0 is a society that can solve various challenges and social problems using various innovations, including new tools, technologies and pedagogical methodologies (Tavares, Azevedo & Marques & Basto, 2023). In other words, Society 5.0 is the final outcome of industry 4.0, the resultant of huge digital transformation and information society (Saradha, 2023).

In the library service domain, the 5th industrial revolution (5IR) represents collaboration between humans and machines to enhance the efficiency of information service delivery to library users (Ekumeme *et al.*, 2024). Technology has impact library and information services



right from the days of vellum, papyrus, parchment, codex till era of printing with moveable type.

The fast pace of innovation in technology is shrinking the world. The world is on the threshold of using technology of industry 5.0 commercially with the advantage of human interaction from the technology of industry 4.0 (Gupta, 2023). Technological revolutions are considered essential for the development of society (DaSilva, dos Santos & Bahia, 2024). Learning and adapting to the prevailing digital environment as well harnessing the potentials of industry 5.0 should be the goal of library and information professionals. Specifically, this paper seeks to:

1. conceptualize and present a synopsis of industrial revolutions to Society 5.0;
2. explore the challenges of harnessing the potentials of society 5.0 for effective library service delivery; and
3. discuss the framework for action: strategic imperatives for African libraries in the society 5.0 era;

2.0 The Evolution to Society 5.0: From Technological Integration to Human-Centricity

The industrial revolution can be defined as the transformation of traditional industrial practices into new techniques dominated by the technologies available at the time. The term industrial revolution simply refers to a series of changes that transform the industry from one state to another (Gupta, 2023; Grodek-Szostak, Siguencia, Niemczyk and Szelag-Sikora, 2023). The concept of “industrial revolutionism” denotes a historical period marked by the creation and adoption of innovative technologies. It represents an ongoing epoch, beginning in the late 18th century and continuing today, characterized by technological advancements tied to digital evolution (Okwoli, Whong & Ofodu, 2022)

Industrial revolutions represent key phases in contemporary history where breakthroughs in technology triggered profound changes in people's socioeconomic conditions. Every such revolution has fundamentally altered established industrial practices, lifestyles, and the societal roles of individuals. Over time, human progress has involved numerous



technological advancements, which typically unfold as gradual shifts in state; however, when a major or transformative disruption takes place, these shifts are classified as revolutions (Ngomana, 2023; Coelho, Bessa, Landeck & Silva, 2023).

Historically, the development of mechanisation in the 18th century triggered the First Industrial Revolution. The Industry 1.0 era was marked not only by the adoption of Steam, but also by the introduction of technology which resulted in the development of the first ever weaving loom in 1784 (Giannoni, 2022). As narrated by Dordevic *et al.* (2023), the first industrial revolution (Hunter-gather society) also known as society 1.0 marks the onset of humanity's development where survival hinged on hunting and gathering food. The first industrial revolution was characterized by the invention of steam engines, which led to a qualitative leap in the economies of scale and industrial settlement (Ali, Ayad & Al Rubaie, 2022),.

The second industrial revolution known as Agrarian Society (Society 2.0) represents a notable shift to agriculture and the beginning of unsettled communities cultivating crops primarily for sustenance (Dordevic *et al.*, 2023). It began in the nineteenth century with the discovery and subsequent use of electricity, as a facilitator for the implementation of the assembly line. Since the mid-nineteenth century, the industry 2.0 paradigm has been central in Europe and the United States, resulting in an increase in the number of factories. This era witnessed the discovery of electricity, oil, telephone, radio and television communications and contributed to developing new products that changed production patterns and people's lives.

Thereafter was the emergence of the third revolution, which is called the digital revolution. This led to technology from advancing electronic and mechanical analogue devices to the digital technology available today. The most important inventions are the personal computer, the Internet and Information and Communications technology (Ali, Ayad & Al-Rubaie, 2022). The Industrial Society which is the society 3.0 denotes the era of industrialization, urbanization, and the advent on modern economics. It began in 1970 throughout the adoption of automatic equipment by manufacturing companies, used for processes that were challenging for human workforce (Dordevic *et al.*, 2023; Giannoni, 2022). As stated by Ali, Ayad and Al Rubaie (2022), the first three industrial revolutions brought to the



world, steam power, railways, electricity, the telephone, the radio, and television; then came the era of digital transformation and the invention of computers and home computers. They noted further that when technological development reached its climax and integrated the physical, digital, and biological world, we enlisted the fourth Industrial Revolution era.

This was followed by the fourth Industrial revolution classified as society 4.0 which is a period characterized by digitalization and automation driven by advancement information technology (Dordevic *et al.*, 2023); while the term 'Fourth Industrial Revolution' was first popularized by Mr. Schwab, founder and executive chairman of the World Economic Forum, in a 2015 article and formally introduced at the World Economic Forum's 2016 annual meeting, his book on the topic was published later that year. Society 5.0, often described as the fifth industrial revolution, builds on the digital transformation of Industry 4.0 by integrating cyber and physical spaces to enhance the quality of life for all. The concept of Society 5.0 was first proposed by Keidanren, Japan's most important business federation, in November 2018. It has subsequently been promoted by the Japanese government. Japan essentially takes the digitalization and transformed dimensions mainly situated on the level of individual organizations and parts of society to a full national transformation, strategy, policy, and even philosophy (Brequel, DeNul, & Petridis, 2021)

In other words, Society 5.0 is the fifth evolution in human social status. The economy started with the early hunter gatherer society. With the green revolution effect later entered agricultural society. Due to increased consumption, the next evolution entered into an industrial society with mass production and, finally, we are now in the current information society of digital area (Saradha, 2023). As the technological development continues, the fifth Industrial Revolution (also called Industry 5.0) has struck the business world (Gupta, 2023).

The evolution from Industry 4.0 to Industry 5.0 marks a shift from advanced digital automation to a model that prioritizes seamless collaboration and synergy between people and intelligent systems. Cortes and Cortes (2022) citing Queirola, Matheu, Ruff, Juica and Ruiz (2021) posit that technological advances of the last few years, especially the technology based on 5G (i.e., the fifth-generation mobile network as a global wireless standard designed to



connect practically everyone and everything) will play a vital role in developing the digital society in the next five years.

Industry 5.0 is an upgrade for industry 4.0. The two concepts complement and integrate with each other. Industry 5.0 represents an evolution of industry 4.0 concept, with a focus on increased interaction and collaboration between humans and machines. This phase provides a new paradigm where the technological advances of industry 4.0 are integrated with human qualities such as adaptability, creativity and ethical reasoning (Gajdzik, 2023; Dordevic *et al.*, 2023 & Mahiri *et al.*, 2023).

With every phase of industrial progress comes profound change, altering not just commercial practices but also the fundamental ways in which society operates (Dordevic, Cockalv, Bakator & Novakovic, 2023). Breque, DeNul & Petridis (2021) defining industry 5.0, recognizes the power of industry to achieve societal goals beyond jobs and growth to become a resilient provider of prosperity, by making production respect the boundaries of our planet and placing the well-being of the industry workers at the centre of the production process.

Society 5.0 seeks to enhance citizen well-being through integrated system services that simultaneously drive societal value creation, including economic progress, social evolution, and sustained growth (Roblek, Mesko & Pobregar, 2021). In contrast, Industry 5.0 centres on leveraging artificial intelligence to significantly strengthen human-machine collaboration (Gajdzik, 2023). Since 2016, as highlighted by Roblek, Mesko, and Pobregar (2021), Society 5.0 has emerged as a prominent research focus, embedded in Japanese policy to foster a human-centric, highly intelligent, and prosperous society capable of addressing persistent societal challenges.

According to Grodek-Szostak *et al.* (2023), there is a consensus in the literature that industry 5.0 differs from previous industrial revolutions because it represents a stakeholder-driven socio-technological phenomenon that systematically shifts classics profit and consumption-driven economic models to a circular economy sustainable development and economic value-creating models. The term 5IR might helpfully differentiate 4IR work to include a primary focus on science itself and a revolution within science. This revolution in the process of science may fundamentally be driving a mode transition, from declining returns to idea



creation to increasing returns (Callaghan, 2023). Nevertheless, one of the most-important paradigmatic transitions characterizing industry 5.0 is the shift of focus from technology-driven progress to a thoroughly human-centric approach. This means that industry needs to consider societal constraints, aiming not to leave anyone behind (Breque, DeNul & Petridis, 2021). According to Gupta (2023), there is a paradigm and orientation shift from technologically advanced production systems to human centric production systems that are moving towards customization. The paradigm shift is also from technology commanded humans to a more collaborative approach, wherein humans can use the technology to advantage.

In the current era of information abundance, managing vast datasets is essential for effective decision-making; Society 5.0 mitigates information overload by strategically leveraging core components of established technologies to streamline data analysis (Saradha, 2023).

Building upon the foundation of the fourth industrial revolution (4IR), which encompassed technologies like automated, AI, and IoT, the 5IR takes innovations further, incorporating breakthroughs in various areas (Enakrire *et al*, 2024). The concept of society 5.0 and industry 5.0 is not a simple chronological continuation or alternative to the industry 4.0 paradigm society. Society 5.0 aims to place human beings at the midpoint of innovation, exploring the impact of technology and industry 4.0 results from technological integration to improve quality of life, social responsibility and sustainability (Tavares *et al.*, 2023). Society 5.0 harnesses integrated services to enhance human well-being by fostering economic progress, societal evolution, and sustained growth, while simultaneously generating broader value for communities. Society 5.0 is a society in which advanced IT technologies, Internet of Things, robots, artificial intelligence and augmented reality are actively used in everyday life, industry, healthcare and other spheres of activity, not primarily for economic advantage but for the benefit and convenience of each citizen (Breque, DeNul & Petridis, 2021).

The members of future society who live and work in smart urban areas will enjoy advantages enhanced by technological, social, and cultural developments that enable the concept of smart living (Roblek, Meško, & Podbregar, 2021). Industry 5.0 is transforming manufacturing processes and reshaping business models through the deployment of smart



technologies, enabling companies to deliver tailored products and services precisely aligned with individual customer preferences. From the industry 5.0 perspective, the technology serves the human, this means that instead of having the worker adapt to ever-evolving technology the manufacturing technology will be adapted to the workers needs and diversity (Mahiri *et al.*, 2023).

One of the defining features of the 5IR era is its steadfast commitment to sustainability, environmental responsibility, and ethical considerations. More so, in the era of the fifth industrial revolution (5IR) characterized by the fusion of digital technologies and the explosion of data libraries are experiencing a profound transformation (Nwobu *et al.*, 2024).

3.0 Challenges in Leveraging Society 5.0 Technologies for Enhanced Library Service Delivery

Several challenges impede the possibility of library and information professionals harnessing the potentials of society 5.0 for enhanced library service delivery.

i. ***Dearth of skilled and competent information professionals:*** Despite the overwhelming benefits associated with the use and application of emerging technologies to librarianship, it is clear that most information practitioners in developing countries do not possess the requisite knowledge required to navigate the terrain of emerging technologies as expected in society 5.0. What could have been responsible for such situation? This could not be unconnected with the slow pace of technological development in the African continent. Most libraries are yet to fully align with the skill demands of 4.0 and as such cannot provide the needed platform for librarians to acquire the requisite digital skill and competency (Adjei & King, 2024). This scenario is exacerbated by poor remuneration, lack of continuous professional development (CPD) structures, and curriculum lag in LIS schools.

ii. ***Reluctance in embracing technological changes:*** Most professionals hardly adjust to changes brought about by emerging technologies. Many professionals exhibit resistance to change and are unwilling to acquire the new competencies required in the digital era and this poses a lot of challenges to library and information practitioners. According to Kamkekar, Dadwal & Ali (2023), the resistance to adopting industry 5.0 technologies can be due to



resistance to change incited due to lack of competencies in employees. In other words, when librarians do not possess the requisite digital skills and competencies necessary to operate effectively in digital environment, then embracing changes becomes problematic. Sometimes, strategic leadership deficiency influences librarians' willingness to embrace technological changes within the African context.

iii. ***Low level of innovative capacity:*** The low level of innovative and creative capacity among practicing library and information professionals pose a lot of problems thereby limiting the extent to which librarians can harness the potentials of society 5.0. In the African context, most promising and prospective librarians are not provided with the enabling environment that fosters innovations and creativity and this affects the extent to which the potentials of society 5.0 can be harness positively.

iv. ***Non-existence of digital-related policies:*** The absence of digital-related policies to guide the design and implementation of action plan relating to industry 5.0 is problematic. A significant barrier to the effective integration of Industry 5.0 principles within organisational and institutional frameworks is the non-existence of comprehensive digital-related policies. This policy vacuum creates a critical gap in strategic governance, leaving stakeholders without formalized guidelines to direct the design, development, and execution of actionable initiatives aligned with the human-centric, technology-augmented vision of Industry 5.0. The lack of such policies undermines systematic planning and resource allocation, resulting in fragmented, ad-hoc adoption of advanced technologies such as artificial intelligence, collaborative robotics, and personalized digital ecosystems. Without a coherent policy framework, institutions particularly in knowledge-intensive sectors like libraries and information services risk misaligned investments, inconsistent implementation standards, and failure to balance technological efficiency with human agency and ethical accountability. Moreover, the absence of policy directives exacerbates challenges in workforce readiness, data governance, cybersecurity, and equitable access to digital infrastructure. It hinders the establishment of performance benchmarks, ethical oversight mechanisms, and stakeholder engagement protocols essential for sustainable digital transformation. In the context of Industry 5.0, where value creation is co-driven by human judgment and intelligent systems, the policy shortfall represents not merely



an administrative oversight but a structural impediment to achieving resilient, inclusive, and socially responsible innovation ecosystems.

v. ***Lack of technological infrastructure:*** The most critical barrier to Industry 5.0 adoption is the absence of robust technological infrastructure (Kanekkar, Dadwal & Ali, 2023). Deficiencies in high-speed networks, scalable computing, and secure data systems prevent the effective deployment of AI, IoT, and human-machine collaboration. This gap hinders real-time analytics, adaptive processes, and equitable access, while increasing vulnerability to disruptions. Overcoming it requires strategic investment in resilient, interoperable digital foundations to enable sustainable and inclusive transformation.

vi. ***Financial Implications:*** African libraries grapple with chronic and severe underfunding, a critical barrier to embracing Industry 5.0 technologies. Sustainable financing is essential not only for acquiring and implementing advanced systems but also for continuous staff training, regular hardware and software upgrades, robust digital infrastructure development, and investment in research and development (R&D) to build adaptive capabilities. Without consistent and strategic financial support, libraries cannot maintain operational relevance, risking technological stagnation, widening digital divides, and diminished capacity to serve as catalysts for knowledge-driven societal advancement in the Fifth Industrial Revolution. According to Kanekkar, Dadwal and Ali (2023), capital investment is not just limited to hi-tech implementation in the organization, but also involves employee training, hardware and software, initial installation, digital infrastructure, and R&D skills. The implementation of industry 5.0 is heavily dependent on financial factors including infrastructure investment, among others.

4.0 Framework for Action: Strategic Imperatives for African Libraries in the Society 5.0 Era

A lot is expected of library and information professionals in contemporary society 5.0. These expectations can be grouped under four strategic basic pillars namely human capital and skills development, infrastructure and technology, policy and leadership, and collaboration and partnership.



Pillar 1: Human Capital & Skill Development

1. *Developing innovative and creative capacities among library and information professionals:* In the digital field, changes and innovations require a continuous updating of knowledge and skills, participation in continuing education programmes being a necessity for maintaining employees and their productivity with a major impact on the success of the organisation, but also on the level of cyber security (Iliana, 2022). Technological innovation provides exciting opportunities and significant challenges for mature workers who are accustomed to routines, tasks, processes and steps (Li, 2022). Innovations in technology are transforming both traditional products and business procedures (Grodek-Szostak *et al*, 2023). In view of these, library and information professionals should ensure that they develop innovative and creative capacities.

2. *Possession of digital-related skills and competency among library practitioners:* Technology diffusion depends primarily on absorption capacity which can be built via internal investment in skills and human capital (Breque, DeNul, & Petridis, 2021). According to Ramirez Ibarra (2023), one of the key challenge in industry 5.0 is the wall of human resources which refers to the need for a skilled and adaptable workforce that can effectively utilize and adapt to the technologies and changes brought by society 5.0; a key challenge in integrating advanced technologies into library operations is the digital proficiency of library personnel, as technical competence is fundamental for successfully adopting and applying new tools. To navigate the demands of digital librarianship effectively, librarians must acquire updated competencies suited to this technology-driven landscape (Bassey & Ayemi, 2022). New roles, behaviours, processes and skills must be acquired rather than concentrating only on sophisticated technologies such as artificial intelligence (Amoah & Minishi-Majanja, 2023). The integration of cutting-edge technologies such as big data analytics, artificial intelligence and the internet of things defines the skills and competencies required in the 5th IR across various industries, including libraries (Ekwuem *et al.*, 2024).



According to Paramita *et al.* (2022), digital fluency is not about the ability to use technology but the ability to adapt to technology use. They further asserted that a person may be familiar and fluent in using the power point application to make presentation in front of clients, but when the pandemic forces him to use video conferencing applications to create presentation online, he may experience difficulties. Digital fluency is not about the ability to use technology but actively learn new technologies and use them to achieve their goals. This includes the ability to analyze, synthesize, evaluate and create in the context of technology and digital information. According to Gupta (2023), the purely technology-intensive systems of Industry 4.0 are gradually being replaced by socio-technological systems that place human well-being at the center; however, the workers need to acquire and upgrade their knowledge and skills for optimum use of these systems. Industry 5.0 prioritizes human-machine partnership, compelling information professionals to develop a wide array of soft skills to remain valuable and impactful in this new era. These competencies extend beyond technical expertise, emphasizing communication, ethical judgment, and flexibility.

3. ***Acquisition of new Skills:*** Library and information professionals are expected to possess the requisite skills and competence required to function effectively in the new revolution era they are migrating to. No wonder, Onunka *et al.* (2023) citing Atanda *et al.* (2021), pointed out that one of the key challenges faced by libraries in the digital age is the need for library staff to demonstrate professional competence in effectively using various digital resources. Hence, the imperativeness of acquiring new skills to be well positioned to function in the society 5.0. These skills are necessarily needed to comfortably exploit the ever surfacing technologies and only those who are digitally savvy can use such technologies to work across the network to efficiently deliver assigned roles (Ukaegbu & Okwu, 2022). Communication and collaboration skills are essential for libraries in the fifth industrial revolution (Nwobu *et al.*, 2024). Digital skills which refer to the ability to recognize, manage, integrate, access, retrieve, appraise and assimilate information in a digital environment is also a prerequisite.



4. ***Retraining of Library and Information Professionals:*** The training and retraining of librarians is a must as professionals find it increasingly difficult to understand and deal with the new ever-changing world in which we live (Mahiri, *et al.*, 2023). The training and re-training are geared towards improving job performance with the ultimate aim of achieving library set goals and objectives. In other words, training and retraining can help librarians to be current with new knowledge and development in their field (Omosekejimi *et al.*, 2019). As rightly highlighted by Mahiri *et al.* (2023), for improved prospects, the workforce should upgrade to newer and more pertinent skill sets. Nevertheless, to close the skill gap and meet the most urgent needs, ongoing training and workforce development are required.

5. ***Embracing innovative approaches:*** library staff need much more in this digital age to embrace digital skills on their work than ever before (Bassey & Ayeni, 2022). According to Masenya and Chisita (2022), technological developments should thus be viewed as opportunities for creating and disseminating knowledge, as well as for fostering innovation within the context of constant technical progress. Embracing 5IR offers a chance to drive unprecedented creativity and inclusivity re-directing progress towards purpose and collective benefit (Ekwueme *et al.*, 2024). According to Gupta (2023), the availability of infrastructure, skilled manpower in developed countries will help them to adopt new innovations quickly whereas developing countries are likely to delay its adoption as society develops in terms of digital technologies, it reflects on the future of libraries (Da Silva, dos Santos & Bahia, 2024).

Pillar 2: Infrastructure and Technology

1. ***Acquisition of digital infrastructure required for value added services:*** Deploying cutting-edge technologies is essential, with an emphasis on generating user-centred value while ensuring humans remain the central force behind this value creation process. As technological capabilities advance, both professional librarians and support staff must actively adopt these innovations. Enabling technologies of industry 5.0 consist of digital, information and operations technologies that collectively drive the ongoing and upcoming digital transformation under industry 5.0 (Ghobakhloo *et al.*, 2023). The enabling technologies of



industry 5.0 are a set of complex systems that combine technologies, such as smart materials, with embedded, bio-inspired sensors (Muller, 2020). The technologies developed worldwide add to the work of professionals in administrative organizations in general and libraries (Dasilva *et al*, 2024).

The diffusion of technological progress has mostly been incremental and gradual overtime, involving improvements and adaptations of existing technology (Bruckner, LaFleur & Pitterle, 2017). Technological frontier now spans many areas of materials, machines and digital systems (Brucker, LaFleur & Pitterle, 2017). Digital infrastructure is the key to connecting people and businesses globally. High quality, affordance broadband internet is the key infrastructure requirement of the digital economy (Bhorat *et al.*, 2023). The technology is a factor in the paradigm shift, especially in the case of librarians (Kaharudin, Kiasti & Savitri, 2023). An important prerequisite for industry 5.0 is that technology serves people rather than the other way around (Breque, DeNul & Petridis, 2021). Library and information professionals must take practical steps towards ensuring that necessary and relevant infrastructures are acquired.

2. Provision of adequate funds to library and information service centres: Funding of libraries is critical repositioning of libraries in Society 5.0 era. Without funds, the acquisition of digital infrastructures will not be feasible. As noted by Okwoli *et al* (2022), for the sake of their patrons, libraries must have a healthy financial budget to invest in technology infrastructure that will enhance both their internal and external services.

Pillar 3: Policy and Leadership

1. Adoption of strategic leadership approach: Giger, Cayogyog and Remorosa (2024) citing Jadha and Machuki (2018) state that “in the setting of information uncertainty and resource constraint, strategic leadership is required to tackle the realities of environmental turbulence and the constant need for appropriate organisational transformation in order to accomplish performance goals”. Leadership understanding and practice must be updated to meet the challenges that come with the demands of society 5.0 and remain effective. The



competencies and roles of the leader should be verified (Balcerzyk & Czainska, 2024). Effective strategic leadership is regarded as a critical component of the success of any form working in the ever-changing and complex environment of the twenty-first century (Giger, Cayogyog & Renorosa, 2024).

Strategic planning, which is also part of strategic leadership also helps managers to identify critical issues and is a pre-requisite for performance measurement in libraries. Strategic planning is about the systematic management of discontinuous change, requiring continuous monitoring of a changing environment and frequent review of organisational priorities in line with environmental factors (Corral, 2001). Leadership skills are crucial for guiding the integration of humans and intelligent systems, managing diverse teams, adapting to technological progress, and fostering effective communication and collaboration (Ikenga & Sijde, 2024 as cited in Ekwueme *et al.*, 2024).

2. ***Formulation of digital-related policy:*** Digital transformation policy analyses cannot be separated from technological adaption factors. Chen *et al* (2023) posit that at the centre of the digital transformation, policy makers should be able to understand messages from the market/society during the diffusion of technologies and synchronize them with the relevant strategic policies. As noted by Enakire & Oladokun (2023), policy is also very crucial to library organisational growth addressing the planning of AI as the enabler of future library services.

Pillar 4: Collaboration and Partnership

1. ***Engaging in strong and reliable collaborative programmes:*** As pointed out by Osuchukwu *et al* (2016), collaboration is not just for a particular sector of library and information services. The fact remains that every library and librarian is in a continual stage of development for sustainability. Thus, to effectively sustain this notion, accessing opportunities for collaboration must become critical and be embraced by proactive librarians. According to Giger *et al* (2024), building external partnerships with organizations that offer resources and expertise strengthens the innovations long term viability. Librarians must be skilled collaborators, able to work effectively in teams, and build partnerships with other organizations



and institutions. Collaboration and partnerships with other institutions, organizations and stakeholders are essential for librarians to enhance their preparedness in the 51R (Nwobu *et al.*, 2024). Developing effective forms of collaboration has become essential for organizations dealing with the challenges of complex, dynamics environments (Pham & Tanner, 2015). Collaborating is joining hands to accomplish tasks that individual libraries cannot achieve alone. Libraries gain the required strength to achieve better results when they collaborate (Olaniyi, Olaajo, & Oluyemisi, 2017).

5.0 Conclusion

The dawn of the Fifth Industrial Revolution embodied in the concept of Society 5.0 presents an extraordinary opportunity to redefine library and information service delivery in Africa. Unlike previous industrial eras, Society 5.0 emphasizes the integration of advanced technologies such as artificial intelligence, robotics, Internet of Things (IoT), and big data analytics with human-centred values. For libraries, this means moving beyond automation and digitization toward truly intelligent and adaptive service ecosystems that respond proactively to user needs and societal challenges.

However, to fully harness these potentials, African libraries must reposition themselves as active enablers of innovation, knowledge democratization, and digital inclusion. This will require not only the acquisition of modern digital infrastructures but also a paradigm shift in mindset, practice, and policy. Library and information science professionals must develop the strategic foresight, digital competencies, and leadership acumen needed to drive transformation from within. Equally important is the formulation of forward-looking policies, robust funding mechanisms, and cross-sectoral collaborations that support scalable and sustainable innovation.

However, the journey toward a smart, inclusive, and resilient library system within the Society 5.0 framework is not without challenges. The persistent issues of limited digital infrastructure, skills gaps, resistance to change, and policy deficiencies must be systematically addressed. These barriers underscore the urgency for proactive investment in professional development, strategic partnerships, and institutional reforms.



Ultimately, revolutionizing library and information services in Africa is not an option; it is a necessity. As stewards of knowledge and facilitators of societal progress, librarians must align their roles with the evolving realities of the digital age. By embracing the ideals of Society 5.0, libraries can transcend traditional boundaries and become catalysts for innovation, empowerment, and sustainable development across the continent. The future of African librarianship lies not in preservation alone but in purposeful evolution and the time to act is now.

Revolutionizing libraries and information centres within the context of society 5.0 is consonance with fifth law of library science that the library is a growing organism, which implies that librarian must as a matter of necessity readjust and re-align with the inevitable wind of technological changes that redefines the landscape of librarianship. It is imperative that librarians should therefore align with the paradigm shift of embracing highly sophisticated technologies in transforming the library services and this can be actualized when librarians take proactive step towards re-evaluating where they are, what they need and how to get to where they should be in society 5.0 era.



References

Adjei, N. D. & King, L. (2024). Academic libraries readiness in the fourth industrial revolution: a comparative study between Ghana and South Africa. *Library Management*, 45 (8/9), 581 - 596

Ali, S. H., Ayad, H. & AL-Rubaie, M. T. (2022). Fifth industrial revolution: New perspectives. *International Journal of Business, Management and economics*, 3(3), 196 - 211.

Amoah, G. B., & Minishi-Majanyi, M. K. (2023). Ghanaian university libraries preparedness for the fourth industrial revolution Africa. *Journal of Library, Archival and Information Science*, 33(1), 51- 64

Balcerzyk, D. & Czainska, K. (2024). Trust in artificial intelligence and the 5.0 leadership. In E. I. Emmary *et al.* (eds.). Digital Synergy. DOI: 10. 1201/9781003440406-10

Bassey, R. C. & Ayeni, F. A. (2022). Exploring the digital skills of library staff on technology acceptance in Nigerian polytechnics: a study of federal polytechnics in South-West Nigeria. *International Journal of Advances in Engineering and Management*, 4 (8), 1042 -1052

Bhorat, H., Signe, L., Asmal, Z., Monnakkotta, J. & Rooney, C. (2023). *Digitalization and digital skills gaps in Africa: An empirical profile*. Washington, D.C: Brookings

Breque, M., DeNul, L. & Petridis, A. (2021). Industry 5.0: towards a sustainable, human-centric and resilient European industry. Policy Brief. Doi: 10.2777/308407

Bruckner, M., Lafleur, M. & Pitterle, I. (2017). The impact of the technological revolution on labour market and income distribution. *Frontier issues, Review of Economic and Social Affairs*, https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/2017_Aug_Frontier-Issues-1.pdf

Callaghan, C. (2023). Revisiting how scientific research drives technological change: the fifth industrial revolution. *South Afr. J. Sci.*, 19 (7/8); Art15556. <https://doi.org/10.17159/sajs.2023/15556>



Chen, L., Ranli, K., Hastiadi, F. F. & Suruyanegary, M. (2023). Accelerating digital transformation in Indonesia: Technology Market and Policy Senya, Indonesia ERIA. <https://www.eria.org/uploads/Accelerating-Digital-Transformation-Indonesia-rev3.pdf>

Coelho, P., Bessa, C., Landeek, J. & Silva, C. (2023). Industry 5.0: the arising of a concept. 4th International Conference on Industry 4.0 and Smart Manufacturing, *Procedia Computer Science*, 217, 1137-1144

Corral, S. (2001). *Strategic planning*. International Encyclopaedia of Information and Library Science. -2nd ed.

Cortes, M. E. & Cortes, E. (2022). The future is now: The fifth industrial revolution has reached the biomedical and health science. *Rev Med. Chile*, 150, 1545-1548

Cortes, M. E. (2023). The fifth industrial revolution in agricultural sciences. *Asian Journal of Agricultural Extension, Economics and Sociology*, 41(11) 50 - 52. Doi: 10.9734/AJAEES/2023/v41i102140

Da Silva, E.K.L., dos Santos, A. A. & Bahia, E.M.D (2024). Trends in library services and the competencies of the librarian. *The Canadian Journal of Information and Library Science*, 47 (2), 3-10, doi:10.5206/cjils-resib.v47i2.17555

Dordevic, L. Cockalo, D., Bakator, M. & Novakovic, B. (2023). Entrepreneurship in society 5.0: integrating technology and humanistic values for a sustainable future. *Industrija*, 51 (1), 29 -45.

Ekwueme, L. O., Oluwaseun, B. O., Ajie, I. A, Ofodu, P. N. & Ambrose, S. E. (2024). Empowering librarians in the fifth industrial revolution navigating skills, challenges and strategies for effective library services in open and distance learning. *Lokoja Journal of Information Science Research*, 2 (1), 79 - 94



Enakirire, R. T., Oladokun, B. D., Nsirim, O. & Gaitanu, P. (2024). Paperless libraries: the trending way to go in the fifth industrial revolution. *Business Information Review*, 41 (4), 164 - 173. Doi: 10.1177/02663821241289793

Enakirire, R. T. & Oladokun, B. D. (2023). Artificial intelligence as enabler of future library services: how prepared are librarians in African university libraries. *Library Hi Tech News*, 41 (3), 1 -5.

Gajdzik, B. (2023). Industry 5.0 as the upgrade of industry 4.0: towards one common concept of industrial transformation. Scientific Papers of Silesian University of Technology Organization and Management series no 181. <https://managementpapers.polsl.pl/wp-content/uploads/2023/12/181-Gajdzik.pdf>

Ghobakhloo, M., Iranmanesh, M., Tseng, M., Grybauskas, A., Steifanini, A. & Amiran, A. (2023) behind the definition of industry 5.0: a systematic review of technologies, principles, components and values. *Journal of Industrial and Production Engineering*, 40(6) 432 - 447. Doi: 10.1080/21681015.2023.2216701

Giannoni, G. (2022). The transition towards industry 5.0: An empirical study through the lenses of RBT Department of Business and Management, LUISS. https://tesi.luiss.it/36336/1/740461_GIANNONI_GIULIO.pdf

Giger, V. M. D., Gayogyog, A. O., Remorsa, R. (2024). Explaining strategic leadership in the adoption journey: a qualitative study of the five stages of diffusing of innovation theory in education. *IJRP*; 149 (1), 110 -132; doi: 10.47119/IJRP1001491520246518

Grodek-Szostak, Z., Siguencia, L. O., Niemczyk, A. & Szelag, Sikora, A. (2023). From industry 4.0 paradigm towards industry 5.0 environmental technology resources, Rezakine, Lativa. *Proceeding of the 14th International Scientific and Practical Conference*, 2, 46 - 49

Gupta, S. (2023). Industry 5.0 spectrum or entity? Special Issue of 19th National Conference on Embracing Change & Transformation - 19th GJ-NatConMITE-Gyan. *Management Journal*, doi: 10.48165/gmj.2023.conf8



Illiana, D. (2022). Digital skills, an attribute of the information society. European Proceedings of Educational Sciences. DOI: 10.15405/epes. 23045.75

Kamkekar, S. S., Dadwal, S. S. & Ali, A. (2023). Investigating of the factors challenges and role of stakeholders in implementing industry 5.0 and its impact on supply chain operations: a study of the global agric-food supply chain. https://gala.gre.ac.uk/id/eprint/46760/1/46760_ALI %20Investigating the factors challenges and role of stakeholders in implementing Industry 5.0 and its impact on supply chain operations.pdf

Li, L. (2022). Reskilling and upskilling the future-ready workforce for industry 4.0 and beyond. *Information System Frontiers*; Springer, 26 (5), 1697-1712

Mahiri, F., Nayoua, A., Douda, S. B. and Amiru, N. (2023). From industry 4.0 to industry 5.0: The transition to human centricity and collaborative hybrid intelligence. *Journal of Human University (Natural Sciences)*, 50 (4), 84 - 94

Masenya, T. M. & Chisita, C. T. (2022). Futurizing Library Services in a Technology-Driven Dispensation: Reflections on Selected Academic Libraries in Zimbabwe and South Africa. In T. Masenya (Ed.), *Innovative Technologies for Enhancing Knowledge Access in Academic Libraries* (pp. 1-21). IGI Global Scientific Publishing. <https://doi.org/10.4018/978-1-6684-3364-5.ch001>

Muller, J. (2020). Enabling technologies for industry 5.0: results of a workshop with Europe's Technology Leaders, Independent Export Report Brussel: Europeans Commission. <https://www.4bt.us/wp-content/uploads/2021/04/INDUSTRY-5.0.pdf>

Nwobu, B. K., Dumbiri, R. O., Ibia, M. J. & Oladokun, B. D., (2024) Libraries in the fifth industrial revolution: skills and knowledge required in preparing librarians for an uncertain future. In: U. C. Udofot *et al.* (eds.). *Digital technologies and library management in higher institutions of learning in Nigeria*. Port-Harcourt: Chadick printing press, pp.3-13



Okwoli, M. E., Whong, F. M. & Ofodu, P. N. (2022). Provision of library and information services in the fourth industrial revolution (4IR) university libraries in Nigeria. Proceeding of Annual Liscon Conference Ibadan, pp.77-96

Oladokun, B. D., Ayinde, L., Enakrire, R. T. (2024). The fifth industrial revolution: information professionals and skills. *Information Matters*, 4(7), 1 - 4.

Olaniyi, O. O., Olajo, P. O., Oluyemisi, A. T. (2017). An assessment of collaborative activities among librarians. *Library Philosophy and Practice (e-Journals)*. 1823. <https://digitalcommons.uni.edu/libphilprac/1823>

Onunka, O., Onunka T., Fawole, A. A., Adeleke, I. J. & Daraojimba, C. (2023). Library and information services in the digital age: opportunities and challenges. *Acta Informatica Malaysia (AIM)*, 7 (2), 113-121.

Osuchukwu, N. P., Otubelu, N. B., Ogbonna, U. A. & Ndukwe, N. C. (2016). Collaboration opportunities: Engaging NGOs in driving best practices in library and information service delivery in Nigerian librarians. *MBJLIS-Middlebelt Journal in Library and Information Science*, 14, 93 -101

Paramita, G.V., Godwin R., Peranganangm Y.A., Wisudha, A & Desson, S. (2022). The road to developing students digital fluency: the role of personality traits, E3S web of conference 388. 04048. https://www.e3s-conferences.org/articles/e3sconf/pdf/2023/25/e3sconf_icobar2023_04048.pdf

Pham, H. & Tanner, K. (2015). Collaboration between academics and library staff: a structurationist perspective. *Australian Academic and Research Libraries*, 46 (1), 2 - 18.

Roblek, V., Mesko, M. & Podbregar, I. (2021). Mapping of the emergence of society 5:0: a bibliometric analysis. *Organizacija*, 54 94), 293 -305



Saradha, A. (2023). Industry 5.0 and society 5.0. In: S. Manikandan, E., Elakuya, C. P., Devi & S. Khansim (Eds.). *Industrial revolution and metaverse industry 5.0*. Keezha Nedumgadu: Quiry Publications.

Tavares, M. C., Azevedo, G. Marques, R. P. & Bastos, M. A. (2023). Challenges of education in the accounting profession in the era 5.0: a systematic review. *Cogent Business and Management*, 10 (2) 1-30, doi: 10.1080/23311975.2023.2220198

Ukaegbu, B. C. N. & Okwu, E. (2022.) Utilization of emerging technologies for improved service delivery in public university libraries in River state Nigeria. *Ghana Library Journal*, 27 (2), 139 - 292

