Towards new productive forces, the information resource management discipline should focus on data-intelligence postprints.

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Abstract

Once discipline orientation, training objectives, and pedagogical models are established, curriculum development becomes the most critical concern. As the linchpin of discipline construction, curriculum quality not only determines the effectiveness of course offerings but directly impacts the caliber of talent cultivation. Curriculum development must fully harness the empowerment of new quality productive forces, organically integrating big data, artificial intelligence, and related content into…

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5. Curriculum Development as the Focus of Discipline Construction

Once discipline orientation, training objectives, and pedagogical models are established, curriculum development becomes the most critical concern. As the linchpin of discipline construction, curriculum quality not only determines the effectiveness of course offerings but directly impacts the caliber of talent cultivation. Curriculum development must fully harness the empowerment of new quality productive forces, organically integrating big data, artificial intelligence, and related content into the curriculum system. Efforts should be intensified to update both curriculum systems and teaching content, build faculty teams combining full-time and part-time instructors, deploy diverse teaching methods, and implement systematic tracking, evaluation, and dynamic adjustment of teaching effectiveness.

For undergraduate, master's, and doctoral programs, a hierarchical yet interconnected curriculum system should be established, featuring distinct positioning and specialized content to meet diverse societal needs. Interdisciplinary exchange and collaboration should be enhanced, with particular attention to

cross-disciplinary dimensions in curriculum design. At the graduate level, emphasis should be placed on exchange and joint training across institutions, as continuous training at a single university from undergraduate through doctoral studies can create a "tunnel effect" in knowledge structures. Curriculum design must also maintain an international perspective, monitoring developments in curriculum construction globally (particularly in iSchools) to grasp emerging trends and directions.

In conclusion, as the driving force of the new era, new quality productive forces profoundly influence the development trajectory of all disciplines. Information resource management must recalibrate its coordinates, seize emerging opportunities, and confront new challenges. The discipline must embrace the mission and responsibility of the new era, taking proactive action to align with national strategic needs and promote a virtuous cycle among education, science and technology, and talent development, thereby breaking through the bottleneck constraining high-quality disciplinary development. Against the backdrop of major transformations in social structure, technological capabilities, and workplace demands, high-quality discipline construction requires even greater empowerment from new quality productive forces, strengthening innovation and transformation driven by technology, improving the talent cultivation system, and expanding disciplinary applications. We must adapt to change and actively pursue it, grasping the initiative in development. Change is difficult, but victory lies in change.

Towards New Quality Productive Forces: Information Resource Management Should Focus on Data Intelligence

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The essence of data intelligence lies in unleashing the value of data elements through intelligent means, and its development is driving human society toward a new paradigm of data empowerment and intelligence-driven progress. Scholars have already noted the impact of data intelligence on the information resource management discipline. With the rapid advancement of generative artificial intelligence (GAI), particularly the widespread application of low-cost, lightweight open-source large models like DeepSeek, whether the information re-

source management discipline can seize the development opportunities of data intelligence and achieve a transformation from traditional information resource management to data-intelligence-based information resource management will largely determine its ability to better serve the development of new quality productive forces. This demands our serious attention.

1. The Relationship Between Data Intelligence and New Quality Productive Forces

Data intelligence is an interdisciplinary research field that integrates large-scale data processing, data mining, machine learning, human-computer interaction, visualization, and other technologies to extract, discover, and obtain revelatory and actionable information from data, thereby providing effective intelligent support for data-driven decision-making and task execution. After more than a decade of development, the advent of the generative artificial intelligence (GAI) era has enabled deeper fusion of data and AI. Data intelligence has achieved a technological paradigm shift from "analysis" to "generation," a qualitative transformation toward multimodal integration, expansion of data forms, extension of the data value chain, innovation in technical architecture, and unlimited expansion of application scenarios. The "Top 10 Keywords of Data Intelligence 2024" released by the China Academy of Information and Communications Technology—including high-quality data supply, AI-oriented data governance, data resource valuation and capitalization, data intelligence platforms, retrieval-augmented generation (RAG), "large models +," marketing intelligence, data security risk assessment, data security operations, and digital intelligence literacy—broadly reflects the current scope of data intelligence research and practice.

One of the important characteristics of new quality productive forces is the reconstruction of human society's value creation system through the deep coupling of data elements and artificial intelligence. Data has become a crucial production factor, playing a key role in the development of new quality productive forces. Data is the foundational element driving new quality productive forces, AI is the core engine for transforming data value, and data intelligence, as the integration of both, converts data elements into decision-making power and creativity through algorithms, forming an innovative ecosystem of "data empowering AI, AI reshaping production, and data intelligence creating new quality," ultimately promoting the leap-forward development of new quality productive forces.

2. The Necessity for Information Resource Management to Focus on Data Intelligence

The information resource management discipline has traditionally taken each node in the "data, information, knowledge, intelligence" chain and the "documents" that record them as its research objects. However, on the one hand, it has devoted more attention to documents, information, and intelligence, while

paying less attention to data and knowledge, especially data. On the other hand, the means of managing and utilizing these objects have been more manual than intelligent. Entering the era of big data and generative artificial intelligence, the necessity for the information resource management discipline to focus on data intelligence and achieve disciplinary transformation has become remarkably evident.

The information resource management discipline must respond academically to the national data element strategy and the significantly increased demands for data resource management and utilization. The characteristics and environmental changes of data resources brought about by numerous relevant national policies and widespread data element practices across industries have made traditional information resource management theories inadequate. The fact alone that data forms in the digital intelligence era are predominantly unstructured, dynamically real-time, and multimodal requires new theories for explanation and analysis. Therefore, it is necessary to take data resources as the primary object of study in the information resource management discipline, combine traditional information resource management theories with data intelligence theories, and construct a new theoretical system for information resource management adapted to the digital intelligence environment.

The rapid iteration and widespread application of artificial intelligence, especially generative AI, are forcing the information resource management discipline to upgrade its methodological system. Generative AI's cognitive ability to process unstructured data has reached or approached human levels, with massively improved efficiency. Generative AI has already reconstructed the chain of data processing and knowledge production. The information resource management discipline needs to break through the efficiency bottlenecks of traditional methods, harness data intelligence, and master data intelligence-based tools related to data, information, knowledge, and intelligence; otherwise, it may lose its discourse power in the data, information, and knowledge ecosystem.

The information resource management discipline must leverage data intelligence to break down traditional boundaries with computer science, management, and other disciplines, integrate into the data element-based ecosystem, enhance disciplinary value, and avoid moving further away from data elements in the digital intelligence era.

3. Main Paths for Information Resource Management to Focus on Data Intelligence

The information resource management discipline's transformation focusing on data intelligence can proceed primarily along the path of "theoretical reconstruction—technological integration—ecological collaboration." Its core lies in the deep integration of traditional information resource management capabilities with intelligent technologies, paying greater attention to and making better use of data resources, forming a new disciplinary paradigm

adapted to the digital intelligence era, and achieving a trinity disciplinary development framework of "data resources—intelligent technology—scenario services."

Theoretical system reconstruction includes expanding disciplinary fields and establishing new sub-disciplines such as data resource management and data intelligence governance, conducting multi-dimensional explorations of data resources in various fields, especially the data lifecycle of generative AI; digitally transforming traditional disciplinary areas such as AI informatics; innovating conceptual frameworks, such as introducing data space theory and developing data intelligence value assessment; and methodological innovation to shift the core logic of methodology from static resource management to dynamic intelligent services, forming an intelligent information resource management methodology system, such as intelligent knowledge base construction and multi-agent collaboration for information resource management.

Technological integration refers to embedding technologies such as big data, artificial intelligence, and especially generative AI into all stages of the information resource management lifecycle, forming a new paradigm of "cognitive information resource management." It also includes information resource management serving data intelligence technologies. For example, in traditional information resource management fields, specialized AI models, systems, platforms, tools, and technologies can be developed based on general generative AI large models combined with various task scenarios; across various industries, the focus should be on exploring data and knowledge activity patterns that adapt to AI technologies and business scenarios.

Ecological collaboration primarily refers to the linkage of government, industry, academia, and research. First, universities should implement the construction of information resource management disciplines focusing on data intelligence in scientific research and talent cultivation, expanding relevant research directions, establishing new majors (such as data intelligence management), offering new courses (such as intelligent data governance, data intelligence analysis, etc.), and transforming traditional courses. Second, universities should collaborate with government departments and enterprises in practical problem research, policy and standard formulation, joint experimental platform construction, student internships, and other areas.

In conclusion, the information resource management discipline's focus on data intelligence essentially represents an intelligent paradigm transformation of the information resource management system in the transition from an "information society" to an "intelligent society." This transformation is reflected not only in the generational replacement of technical tools but more profoundly in the fundamental reshaping of knowledge production, dissemination, and utilization. If the discipline can achieve three strategic positionings through this transformation—"enabler of data element value realization, constructor of intelligent society ethics, and guardian of digital civilization memory"—while maintaining its essential core and boldly embracing the technological revolution, it

can play an irreplaceable role in releasing data element value, developing new quality productive forces, and building an intelligent society, thereby achieving a leap in disciplinary value.

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Note: Figure translations are in progress. See original paper for figures.