Postprint: Knowledge Service Transformation Strategies for Academic Publishing Units

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Abstract

From the perspective of the essence of publishing, it is an activity or process whereby information providers transmit information content to information demanders. As people increasingly perceive knowledge acquisition through channels such as books and CDs as monolithic, and as they expect publishing enterprises to satisfy their demands for personalized information products, traditional publishing enterprises must confront reality and undergo transformation across multiple dimensions, including content, technology, marketing, technology, etc., thereby enabling future healthy development.

Full Text

Preamble

Strategies for Knowledge Service Transformation in Academic Publishing Units

Abstract: Analyzing the essence of publishing reveals it to be an activity or process whereby information providers transmit content to information seekers. As people increasingly find traditional channels such as books and CDs inadequate for acquiring knowledge, and as they demand personalized information products from publishing enterprises, traditional publishers must recognize this reality and transform across multiple dimensions—content, technology, marketing, and operations—to achieve healthy future development.

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1.1 Academic Publishing and Knowledge Services

Academic publishing serves specialized readers in professional fields, primarily through journal publishing, digital publishing, and book publishing. Built upon academic and quasi-academic content, it is primarily executed by editors with specialized expertise. Both in terms of content and audience, academic publishing exhibits high degrees of specialization with clearly defined target audiences and significant market segmentation. Moreover, its content continues to grow and develop, demonstrating strong brand-building effects and notable profitability.

The essence of knowledge services requires a foundation of large-scale, systematic, high-value information content. Through deep mining, transformation, indexing, and semantic association of this content, diverse and personalized knowledge needs of users across different scenarios can be met. In other words, knowledge services provide systematic and diversified solutions tailored to users' individual needs, effectively serving as decision-making tools for users.

Academic publishing units possess rare professional advantages in delivering knowledge services. With rapid technological advancement and escalating user knowledge demands, these units will inevitably transition toward knowledge services. Furthermore, professional knowledge services require massive, systematic, specialized knowledge as a prerequisite—precisely what academic publishing units possess in abundance. With their vast, authoritative, and systematic professional knowledge resources, they are naturally positioned to provide specialized knowledge services and will undoubtedly play increasingly important roles in this domain.

1.2.1 User-Centered Service

The primary function of knowledge services is to satisfy users' knowledge needs. User experience serves as the guiding principle, with the main objective of enhancing user satisfaction by meeting their knowledge requirements. The service delivery process must involve continuous attention to user participation while creating appropriate scenarios based on actual needs to fulfill users' latent demands.

1.2.2 Solution-Oriented Service

Knowledge services constitute a process of problem-solving through multifaceted support. The main purpose is to help users understand and analyze problems,

discover and propose solutions, and associate, integrate, and push relevant information to help users establish reasonable goals. Simultaneously, information must be re-filtered and reorganized according to evolving user needs to provide dynamic knowledge that helps solve problems.

1.2.3 Personalized Service

Knowledge services must address different problems and meet personalized needs based on users' individual requirements. Since user characteristics and problems vary, solutions cannot be identical. Therefore, knowledge services must start from user needs, combine personal preferences, select appropriate service methods matching users' actual situations, and provide dynamic, suitable services.

1.2.4 Hierarchical Service

Knowledge services exhibit hierarchical characteristics, meaning they provide different levels of products and services based on users' varying knowledge needs. User knowledge needs fall into three levels: first, needs users are unaware of; second, needs users are aware of but not clearly conscious of; and third, needs users have clearly recognized. Meeting these different levels of knowledge needs delivers different values to users, though the required resources and costs also differ significantly.

1.3 Domain-Specific Knowledge Services

Academic publishing users require precise information content, particularly authoritative, scientific, and systematic knowledge, as they are typically professionals in specific fields. As information content becomes increasingly complex and abundant, professional classification and organization become particularly crucial.

Through years of development, academic publishing units have accumulated massive, scientific digital resources that can be rapidly transformed into knowledge through specific processing. However, possessing rich knowledge resources does not automatically enable knowledge service provision. Archives, libraries, and information centers, despite having largely completed digitalization of information resources and possessing vast knowledge assets, see most of their resources go unused—primarily because these institutions fail to provide products and services based on user needs. The focus of knowledge services is not whether users receive requested information, but whether the provided information helps solve their problems. Therefore, knowledge content must integrate with professional users' work activities to meet their specialized and personalized needs. For example, data and document services for researchers must satisfy their needs for project initiation and experimental research, while evidence-based retrieval services for doctors must meet clinical diagnosis and treatment needs.

Academic publishing units' knowledge services must first collect and organize authoritative, representative professional knowledge content resources, processing them through deep mining, semantic association, indexing, and fragmentation. Simultaneously, by combining these with various domain-specific needs, they can intellectually support diverse activities in the national economy and meet knowledge demands for scientific and technological innovation.

2. Current State of Knowledge Service Models

In 2015, the State Administration of Press, Publication, Radio, Film and Television issued the "Notice on Designating Pilot Units for Professional Digital Content Resource Knowledge Service Models," identifying 28 pilot publishing units. This demonstrates that after undergoing digital publishing process reengineering and professional resource database construction, academic publishing' s digital transformation is now moving toward building professional knowledge resource service platforms under national policy guidance. Influenced by this policy, some Chinese publishing units have begun exploring professional knowledge service models, and with the advent of the knowledge economy, some internet companies have also begun innovating knowledge service models through capital utilization. Based on varying degrees of interaction in knowledge service models, they can be divided into three types:

2.1 End-to-End Advisory Service Model

In the end-to-end service model, knowledge service providers assemble dedicated advisory teams to comprehensively analyze client needs, ensuring services meet requirements. Both providers and clients participate in this process, achieving direct end-to-end communication that enhances client satisfaction.

Zhubajie.com employs this service model: First, service requesters post their problems online, obtain multiple solutions through rewards, and select preferred options. Then, through rapid matching, the platform identifies suitable service providers online based on requesters' requirements, who deliver one-on-one services. The "Lai Chushu" platform, affiliated with Intellectual Property Publishing House, is an internet social platform providing self-service book publishing, offering authors not only full-process publishing services but also book promotion services.

2.2 Digital Reference Consultation Service Model–Q&A Model

The Q&A model' s main characteristic is providing targeted answers to users. Supported by artificial intelligence technology, service providers offer individual responses to user questions, enabling users to obtain specific knowledge and information.

Zhihu is a knowledge-sharing platform employing the Q&A model and one of China' s most influential online Q&A communities. Zhihu brings together elites

from various industries and professional fields who share experiences, perspectives, and specialized knowledge through Q&A interactions. Subjectively, this model represents knowledge sharing; objectively, it generates knowledge services. The Navigation Technology e-Question e-Answer platform, constructed by People' s Communications Publishing House Co., Ltd., also adopts the Q&A model. It builds a navigation technology knowledge structure through Q&A interactions, answers professional navigation technology questions, and establishes a Q&A database system integrating theory and practical cases to meet crew members' learning and work needs.

2.3 Self-Service Model–Knowledge Base Model

The knowledge base model aggregates and classifies knowledge needs and service experiences from existing clients, consolidating low-level and repetitive demands. Supported by appropriate technical means, it provides standardized service solutions to solve client problems. Additionally, clients can obtain knowledge services through self-service.

CNKI' s industry knowledge base employs a "platform + data" model, utilizing CNKI' s academic resource data to organize and aggregate various knowledge outputs published by comprehensive management institutions, displaying and aggregating them across different dimensions and levels to enable users to obtain one-stop self-service knowledge. "E-Zhiyuan," constructed by Electronic Industry Publishing House, adopts this model by selecting and processing electronic technology professional books to make them knowledge-based and structured, transforming knowledge into forms such as knowledge maps, knowledge navigation, and knowledge bundles to provide users with extensive reading content and facilitate professional knowledge and skill acquisition.

Currently, these three service models remain in early development stages and have not fully demonstrated their profitability. However, against the backdrop of the knowledge economy, the knowledge consumption market shows broad development prospects.

3. Paths for Academic Publishing Units to Achieve Knowledge Service Transformation

Knowledge service models must align with clear implementation paths without contradiction. Regardless of which knowledge service model academic publishing units adopt, they must address four dimensions: demand, content, technology, and marketing.

3.1 Creating Demand Scenarios and Optimizing User Experience

Effective knowledge services should be built upon user needs, striving to enhance user satisfaction when determining service content and selecting delivery

methods. In other words, accurately understanding user needs is the prerequisite for knowledge services; only by grasping user needs can future development be better achieved.

Discovering demand occurs when knowledge services reach their highest level—simultaneously addressing users' business processing and professional learning needs, enabling specific populations to learn exactly what they need at precisely the right time. These work scenarios typically appear in ERP or OA modules, where comprehensive analysis of employees' work contexts enables automatic delivery of needed knowledge. Therefore, publishing institutions must systematically analyze work scenarios and learning habits of employees in different positions, striving to integrate knowledge with work processes and scenarios to push personalized knowledge products to employees, ultimately achieving close integration between knowledge services and employees' work and learning.

Creating demand addresses situations where users who clearly understand their knowledge service needs can search or consult experts for solutions but are helpless regarding what they "don' t know they need." Academic publishing units must analyze scattered information about users'expressed knowledge needs, then utilize knowledge service systems to select relevant professional knowledge, create work scenarios and knowledge maps on this basis, help users accurately articulate their needs, form clearer understanding of user requirements, and provide the most effective knowledge services.

3.2 Strengthening Knowledge Management and Optimizing Knowledge Structure

For the publishing industry, knowledge content represents core value, most evident in academic publishing. In my view, both print and digital publishing derive value from content; regardless of changes in dissemination carriers or direction of era development, content maintains its unshakable importance.

User-oriented knowledge resource integration begins with information collection when academic publishing constructs knowledge systems. It requires fully leveraging accumulated author resources and content resources from industry development to maximize their advantages, combining internal resources after knowledge-based processing with external resources. Simultaneously, it must be grounded in meeting user needs to provide knowledge services corresponding to production and innovation activities.

Building professional and authoritative knowledge systems involves assembling knowledge systems from themes and related content, including operational process knowledge, factual conceptual knowledge, and domain-specific knowledge. To provide high-quality knowledge services, authoritative, comprehensive, and specialized knowledge systems must be established, constituting high-value assets for academic publishing institutions alongside content resources. Knowledge systems can connect fragmented knowledge, guide users in obtaining knowledge, enable deeper understanding, and allow users to receive systematic knowledge

services.

Subject-based knowledge indexing requires academic publishing units to index content resources for effective management of content assets and to achieve structuralization and digitalization of specialized content resources. Retrieval depends on indexing as a prerequisite; indexing not only reflects key document information but also enables retrieval. Incorrect indexing makes precise retrieval impossible. Academic publishing units must use standardized subject terms for indexing, avoiding under-indexing, missed indexing, duplicate indexing, or excessive indexing. Additionally, indexing depth must be appropriate.

Knowledge resource iteration and innovation involves evaluation structures that directly affect knowledge content adjustment and updating. Through deep mining of stored information content, knowledge innovation is achieved, then organized and incorporated into knowledge bases to support knowledge consumption. Evaluation of knowledge utilization results follows, creating a cyclical process that builds a dynamic, iterative knowledge service system.

3.3 Leveraging Information Technology to Build Service Platforms and Expand Development Space

Effective knowledge service provision relies on support from intelligent information processing platforms. Sharing, trading, and collaboration of knowledge resources in the service process can only be realized on professional information technology platforms. Furthermore, advances in integrated and multimedia technologies have enhanced computer and mobile terminal functions, enabling multiple media capabilities for processing symbols, text, images, and other media, ultimately allowing publishing units to provide high-quality knowledge services to users. Developments in new technologies—including retrieval technology, data mining and push technology, big data technology, data storage technology, and IoT technology—have further improved information collection, organization, transmission, and application efficiency, objectively providing material support for publishing units to deliver knowledge services.

3.4 Leveraging Industry Resource Advantages to Build Renowned Brands and Improve Service Quality

Many academic publishing units maintain close connections with administrative authorities, which provide significant support for their development. Academic publishing units are characterized by serving industry development; each has accumulated vast user groups during its development, established well-known brands, and built robust market sales systems, enabling precise delivery of quality knowledge products to users in need.

Knowledge services represent new developments for any industry, and understanding and familiarity cannot be achieved in extremely short timeframes. Marketing systems established on the foundation of traditional publishing can

effectively reduce promotion costs and difficulties while facilitating precise target user positioning. From another perspective, academic publishing units can apply for knowledge service project funding from industry administrative authorities, requesting participation in content resource integration and professional knowledge system construction.

Although most Chinese publishing units currently operate at relatively low levels of knowledge service, with significant gaps between enterprises—particularly lagging in funding, concepts, and institutional systems—we should also recognize that some publishing units have already formulated knowledge service development strategies and are driving knowledge services toward greater maturity according to these strategies. Despite potential obstacles on this development path, we should remain confident that knowledge services in academic publishing units will continue to improve.

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